

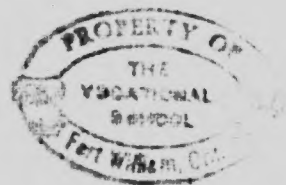
CANADA
DEPARTMENT OF MINES
HON. P. E. BLONDIN, MINISTER; R. G. McCONNELL, DEPUTY MINISTER.

MINES BRANCH
EUGENE HAANEL, PH. D., DIRECTOR.

THE
PRODUCTION OF IRON AND STEEL
IN
CANADA

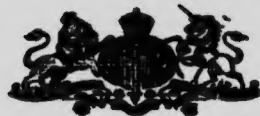
During the Calendar Year

1915



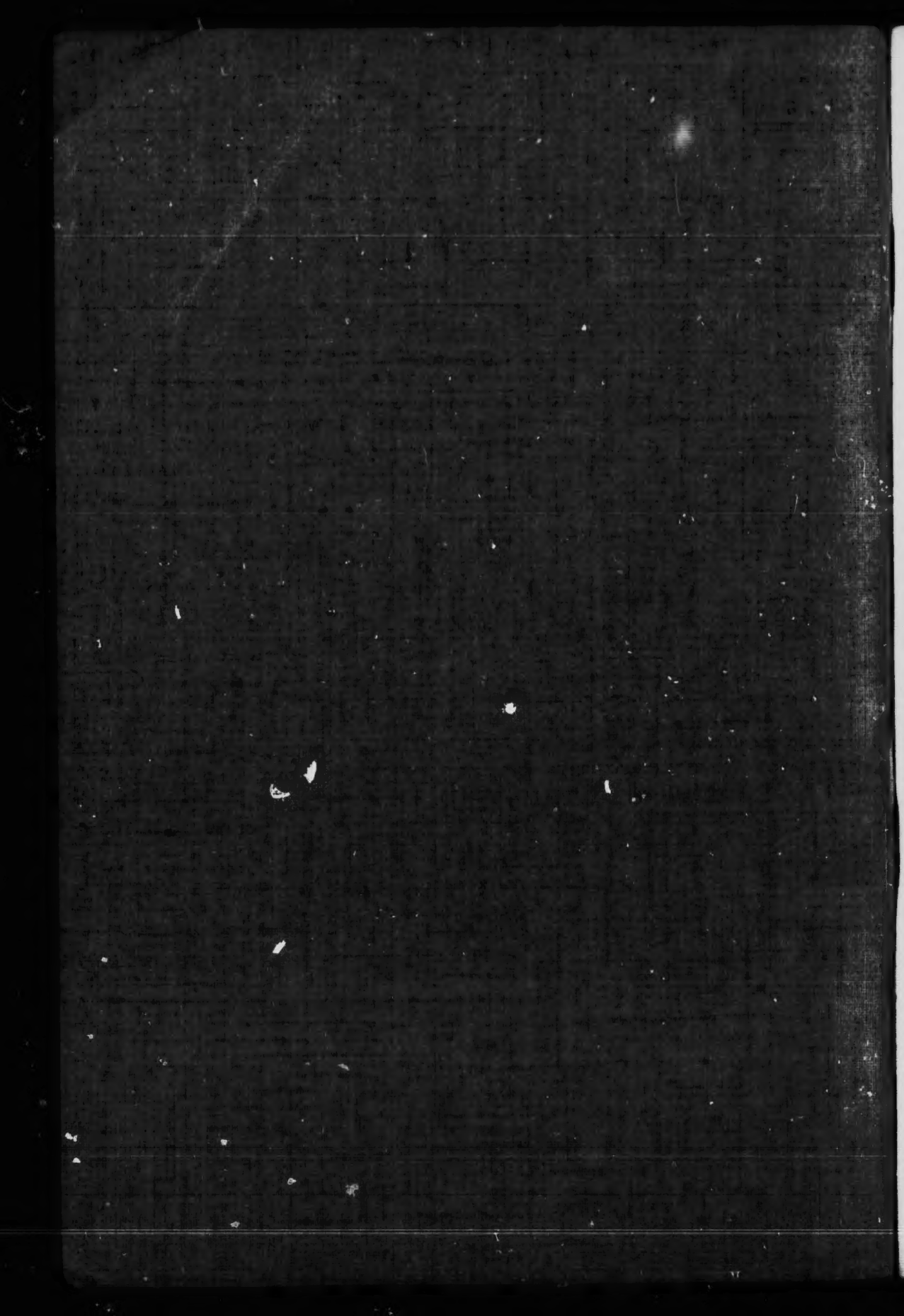
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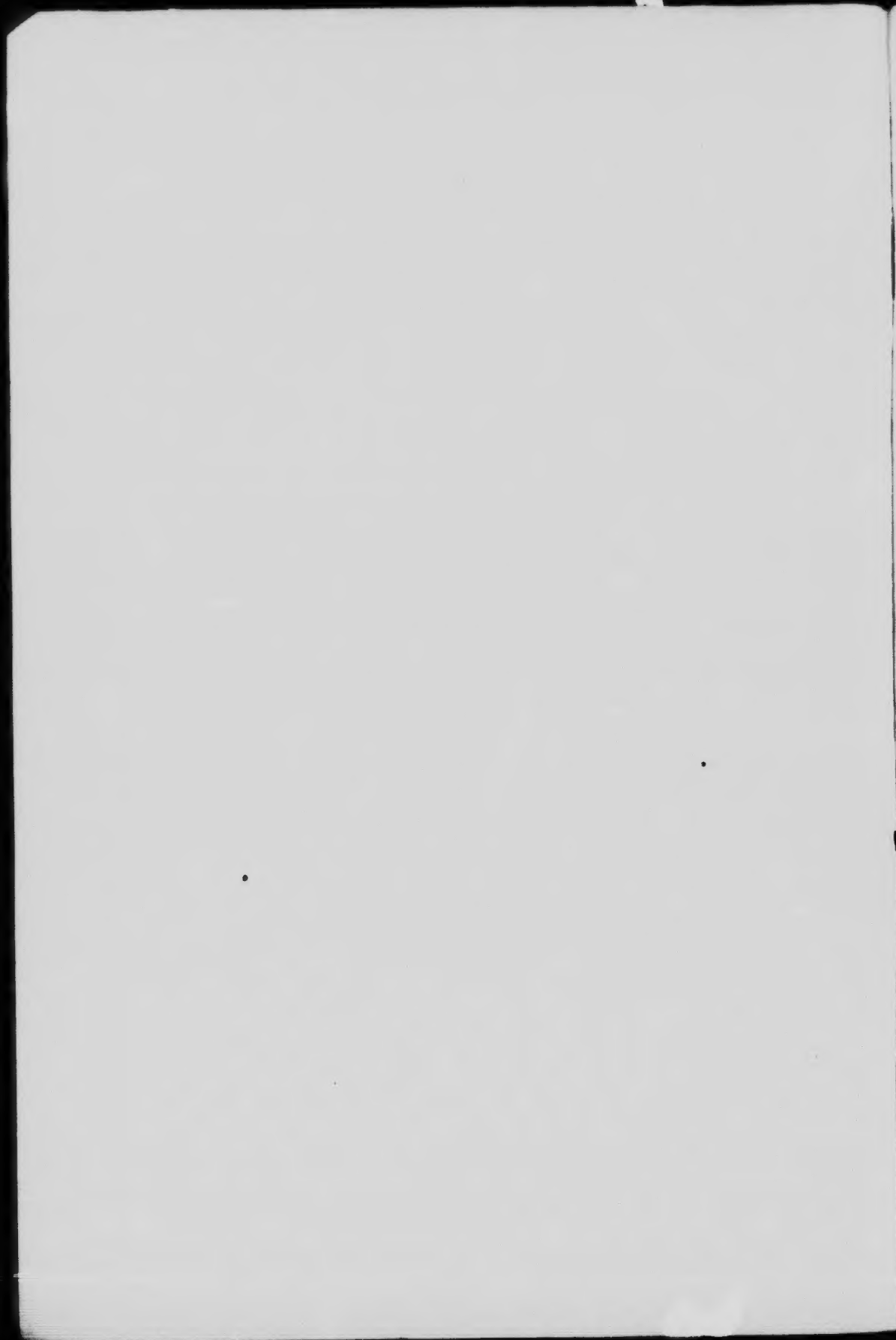


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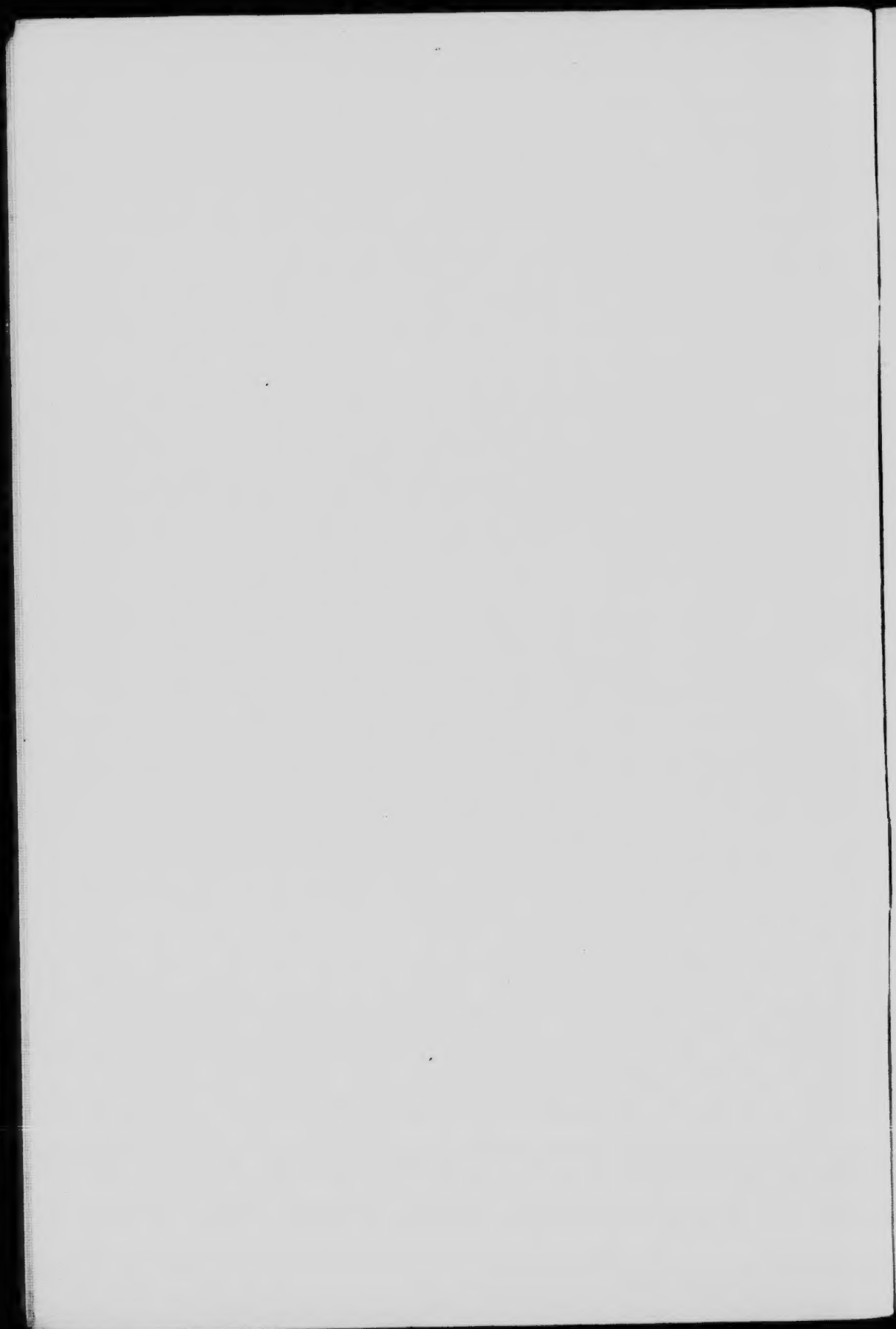
No. 419.

**ADVANCE CHAPTER OF THE ANNUAL REPORT ON THE
MINERAL PRODUCTION OF CANADA, DURING THE
CALENDAR YEAR 1915**

*(Tons used throughout this report are short tons of 2,000 pounds, except where
otherwise stated).*

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IRON AND STEEL

INTRODUCTORY

The year 1915, particularly the later months, was marked by a steady renewal of activity in the iron and steel industry, due not so much to industrial demands for Canadian consumption, as to the requirements of steel for munitions and the export demand for billets and wire.

The shipments of iron ore are the largest recorded with the exception of 1902. The production of pig-iron was practically equivalent to that of 1911, having been exceeded only in 1912 and 1913, while the production of steel ingots and castings was exceeded only in 1913.

Summary of Iron and Steel Statistics, 1912-1915.

		1912.	1913.	1914.	1915.
Iron ore shipped.....	Short tons	215,883	307,634	244,854	398,112
Canadian iron ore charged to blast furnaces ..	"	71,588	139,436	182,964	293,305
Imported iron ore charged to blast furnaces ..	"	2,019,165	2,110,828	1,324,326	1,314,957
Iron ore charged to steel furnaces.....	"	43,006	55,018	37,686	74,872
Pig-iron made.....	"	1,014,587	1,128,967	783,164	913,775
Pig-iron and ferro-alloys, exported.....	"	6,976	6,326	19,063	26,545
Pig-iron imported.....	"	272,565	236,769	78,680	47,842
Ferro-alloys made.....	"	7,834	8,075	7,524	10,794
Ferro-alloys imported.....	"	19,810	30,355	22,147	13,758
Pig-iron and ferro-alloy consumption.....	"	1,307,820	1,397,840	872,452	959,254
Pig-iron used in steel furnaces.....	"	735,559	913,722	619,030	747,834
Steel ingots and castings made.....	"	957,681	1,168,993	828,641	1,020,336
Steel rails made.....	"	471,422	554,481	428,225	232,411
Canadian coke used in iron blast furnaces..	"	609,183	710,260	330,269	578,743
Imported coke used in iron blast furnaces..	"	656,815	706,888	590,902	486,022
Iron and steel imported.....	"	(b) 1,369,150	(c) 1,890,506	(c) 878,179	(c) 771,007
Number of completed blast furnaces.....	No.	19	22	22	19
Number of men employed in blast furnaces..	"	1,358	1,589	1,018	1,004
Wages paid in blast furnaces.....	\$	993,941	1,149,345	693,632	675,453
Value of pig-iron produced.....	\$	14,550,990	16,540,012	10,002,856	11,374,199
Value of iron and steel goods exported. (c)	\$	10,682,484	13,909,149	14,391,746	48,268,148
Value of iron and steel goods imported.....	\$	(b) 105,614,450	(c) 145,226,972	(c) 79,762,262	(c) 74,308,983

(b) Figures cover the fiscal year ending March 31 and include all iron and steel goods for which weights are given.

(c) Figures cover the calendar year.

Canadian iron blast furnaces continue to be operated largely on imported ores and fuels, only about 17 per cent of the ore consumption and 54 per cent of the fuel used in 1915 being of domestic origin.

The imports of iron and steel which reached a maximum in 1913 show a further falling off in 1915 amounting in value to just half that of the former year. The exports, however, continue to increase, the value in 1915 being over three times that of the exports in 1914.

During the earlier months of the year, low prices, a restricted market, and sharp competition pressed heavily upon the operators forcing the marketing of steel at the lowest possible margin. As the year progressed, however, the enormous demand for munitions and war requirements rapidly absorbed available stocks until before the close of the year market requirements could not be met. The installation of new open-hearth furnaces was undertaken at several plants, while a number of small electric furnace units were also constructed and others projected in an attempt to meet the demand.

The following table compiled and published by the "Iron Trade Review," Cleveland, O., shows in a comprehensive way the variation in price during 1915 of all the more important classes of iron and steel products, clearly indicating the rapid upward tendency during the last six months of the year.

Average Monthly Prices of Iron and Steel Products at Pittsburgh in 1915.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Bessemer pig-iron... per ton	\$14.70	\$14.63	\$14.55	\$14.55	\$14.55	\$14.58	\$14.88	\$15.89	\$16.80	\$16.95	\$17.45	\$19.70
Basic, pig-iron.....	13.45	13.45	13.45	13.45	13.45	13.54	13.83	14.80	15.65	15.95	16.70	18.35
Foundry, pig-iron....	13.70	13.95	13.80	13.45	13.45	13.45	13.60	14.70	15.45	15.57	16.45	18.35
Malleable, pig-iron..	13.70	13.70	13.80	13.45	13.45	13.45	13.60	14.70	15.45	15.57	16.45	18.35
Grey forge, pig-iron..	13.45	13.45	13.45	13.40	13.20	13.20	13.20	14.20	14.95	15.07	15.88	18.15
Open-hearth sheet bars	68.00	68.00	90.00	90.00	88.00	95.00	98.00	97.00	109.00	108.00	99.00	100.00
Ferro-manganese, Balt	73.00	73.00	73.00	73.00	73.00	73.00	73.00	73.00	73.00	73.00	73.75	83.00
Bessemer billets.....	19.50	19.50	19.50	19.50	19.50	19.87	21.40	23.00	24.00	25.50	27.75	29.60
Open-hearth billets...	19.50	19.50	19.50	19.50	19.50	19.87	21.40	23.00	24.00	25.50	27.75	29.60
Open-hearth sheet bars	20.00	20.00	20.00	19.00	19.50	20.37	21.70	25.00	25.00	26.50	28.25	30.60
Open-hearth sheet bars	20.00	20.00	20.00	19.00	20.00	20.37	21.70	25.00	25.00	26.50	28.25	30.60
Steel rails..... per lb.	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Beams.....	1.10	1.10	1.15	1.15	1.20	1.25	1.25	1.30	1.34	1.41	1.625	1.74
Plates.....	1.10	1.10	1.12	1.11	1.20	1.25	1.25	1.30	1.34	1.41	1.625	1.74
Steel bars.....	1.10	1.10	1.15	1.15	1.20	1.25	1.25	1.30	1.34	1.41	1.625	1.74
Iron bars.....	1.12	1.10	1.10	1.20	1.20	1.24	1.25	1.30	1.37	1.47	1.60	1.84
Tin plate.....	3.10	3.10	3.10	3.70	3.18	3.10	3.10	3.10	3.10	3.10	3.35	3.60
No. 28 black sheets	1.80	1.80	1.80	1.80	1.80	1.80	1.77	1.83	1.92	2.05	2.22	2.50
No. 28 Gal. sheets...	2.77	3.01	3.30	3.30	3.40	4.46	4.55	3.93	3.67	3.50	3.90	4.75
No. 10 blue sheets...	2.50	3.01	3.30	3.30	3.40	4.46	4.55	3.93	3.67	3.50	3.90	4.75
Wire rods..... per ton	25.00	25.00	25.00	25.00	25.00	25.00	25.60	26.75	28.50	30.00	34.50	39.00
Wire nails..... per lb.	1.55	1.55	1.65	1.59	1.55	1.55	1.59	1.61	1.69	1.76	1.87	1.94
Plain wire.....	1.31	1.35	1.40	1.39	1.35	1.35	1.39	1.42	1.42	1.42	1.52	1.63
Hoops..... per ton	1.25	1.25	1.25	1.25	1.25	1.25	1.26	1.32	1.42	1.52	1.72	1.94
Heavy melting..... per ton	11.53	11.62	12.00	11.90	11.75	11.75	11.75	13.38	14.23	14.00	15.11	17.40
Structural rivets..... per lb	1.45	1.45	1.45	1.45	1.45	1.49	1.50	1.50	1.61	1.75	2.28	2.46

* From the Iron Trade Review, Cleveland, O.

IRON ORE

Active mining operations were conducted at three mines only during 1915, viz.: The "Helen" and "Magpie," in the Michipicoten district, and the "Moose Mountain," north of Sudbury. Small shipments were made from stock at two other properties.

The total shipments during the year were 398,112 tons, valued at \$774,427, as compared with 244,854 tons, valued at \$542,041, shipped in 1914. Of the total shipments in 1915, 308,382 tons were sent to blast furnaces in Canada and 89,730 tons to the United States.

The shipments included 205,989 tons of hematite, 132,906 tons of roasted siderite, and 59,217 tons of magnetite (including some ores with an admixture of hematite). Shipments in 1914 included 89,454 tons of hematite; 109,838 tons of roasted siderite, and 45,562 tons of magnetite.

All iron properties in the eastern Provinces of Nova Scotia, New Brunswick, and Quebec have been idle throughout 1914 and 1915, although small shipments were made from Bathurst mine stock of 3,683 tons in 1915 and 4,775 tons in 1914. These ores would average about 46½ per cent iron.

In Quebec, the Manitou Iron Mining Co. opened up their mine at Ivry-on-the-Lake in Terrebonne county on the 4th of December, and have undertaken to make considerable shipments of ilmenite during 1916.

In Ontario the "Helen" and "Magpie" mines were operated throughout the year by The Algoma Steel Corporation. From the "Helen" mine there was shipped to the Company's blast furnace at Sault Ste. Marie, about 205,989 tons of hematite ore averaging 52 per cent iron. This mine has to its credit the largest iron ore production of any mine in the Dominion, the shipments from the commencement of operations in 1900 to the end of 1915 having been 2,263,522 gross tons (2,535,145 short tons). In addition there was shipped from 1906 to 1915 inclusive 37,572 gross tons (42,081 short tons) of iron pyrites. The ore body has been almost completely worked over and the comparatively small tonnage extracted during recent years has come principally from caved ore and from pillars left when the ore was extracted by stoping.

Shipments from the "Magpie" mine during 1915 were 132,906 tons of roasted siderite, carrying 50 per cent iron of which a portion was sold in the United States. The roasting plant at the "Magpie" includes six rotary kilns each 8 feet in diameter and 125 feet long. Rotary cylindrical coolers convey the hot roasted ore to the stock yard. The kilns are fired with pulverized coal. All the mine equipment is operated by electricity generated at Steep Hill Falls on the Magpie river about 12 miles distant. The siderite ore has an iron content of about 35 per cent and an objectionable amount of sulphur, while the average analysis of the roasted ore (1914 shipments) was as follows in percentages: iron 50·60; silica 9·39; sulphur 0·25; phosphorus 0·011; alumina 1·02; lime 8·79; magnesia 7·05; manganese 2·71.

The first shipments were made in 1913 and the total shipments during three years have been 236,671 gross tons (265,072 short tons).

The Moose Mountain mines, at Sellwood, Ont., owned by Moose Mountain, Ltd., were operated for less than two months closing down on May 28. Shipments included 53,277 tons of cobbled ore from stock pile averaging 54.25 per cent iron, and 1,882 tons of briquettes averaging 63.02 per cent iron.

These magnetite ores have been under development since 1906, and total shipments to the end of 1915 have been 323,049 gross tons (361,815 short tons). A magnetic cobbing plant was installed in 1909 and enlarged in 1910. In 1912 a Gröndal concentrating and briquetting plant was erected for the purpose of treating the low grade siliceous ore comprising the major portion of the Company's ore reserves. Experimental operations have been carried on intermittently at this plant since its installation, and are still in progress.

The mines of the Canada Iron Mines, Ltd., "Bessemer" and "Childs" in Mayo township and Coe Hill in Wollaston township, as well as the magnetic concentrating plant at Trenton, remained idle throughout 1915, although a small tonnage of concentrates was sold during the year. The entire remaining stock of concentrates at Trenton amounting to about 14,200 tons, was sold in December for 1916 delivery and will be included in next year's record.

Production of Iron Ore by Provinces, 1913-14-15.

Provinces.	1913.		1914.		1915.	
	Short tons.	Value.	Short tons.	Value.	Short tons.	Value.
New Brunswick.....	86,416	\$ 153,820	4,775	\$ 10,841	3,683	\$ 8,261
Nova Scotia.....	20,436	21,049				
Quebec.....	5,102	26,999				
Ontario.....	195,680	427,975	240,079	531,200	394,429	766,166
	307,634	629,843	244,854	542,041	398,112	774,427

Production of Iron Ore by Classes of Ore, 1907-1915.

IN SHORT TONS.

Year.	Hematite.	Magnetite.	Carbonate including siderite.	Bog ore.	Total.
1907.....	205,795	50,073	42,740	14,248	312,856
1908.....	173,164	49,946	4,869	10,103	238,082
1909.....	190,473	74,240	.....	3,330	268,043
1910.....	130,380	127,768	.....	1,270	259,418
1911.....	137,399	72,945	.....	.....	210,344
1912.....	86,971	128,912	.....	.....	215,883
1913.....	92,386	215,248	.....	.....	307,634
1914.....	89,454	45,562	109,838	.....	244,854
1915.....	205,989	59,217	132,906	.....	398,112

A record of the production by provinces in past years is shown in the accompanying tables. There was a considerable production in Ontario previous to 1886, which is not recorded.

Production of Iron Ore by Provinces, 1886-1915.

Calendar Year.	New Brunswick.	Nova Scotia.	Quebec.	Ontario.	British Columbia.	Total. Short tons.
1886.....		44,388	.....	16,032	3,941	64,361
1887.....		43,532	13,404	15,698	2,796	76,330
1888.....		42,611	10,710	16,894	8,372	78,587
1889.....		54,161	14,533	.....	15,487	84,181
1890.....		49,206	22,305	.....	.....	76,511
1891.....		33,649	14,380	.....	950	68,979
1892.....		78,258	22,690	.....	2,300	103,248
1893.....		102,201	22,076	.....	1,325	125,602
1894.....		89,379	19,492	.....	1,120	109,991
1895.....		83,792	17,783	.....	1,222	102,797
1896.....		58,810	17,630	15,270	196	91,906
1897.....		23,400	22,436	2,770	2,099	50,705
1898.....		19,079	17,873	21,111	280	58,343
1899.....		28,000	19,420	25,126	2,071	74,617
1900.....		18,940	19,000	82,950	1,110	122,000
1901.....		19,619	15,489	272,538	7,000	313,646
1902.....		16,172	18,524	359,288	10,019	404,003
1903.....		40,335	12,035	209,634	2,290	264,294
1904.....		61,293	16,152	141,601	.....	219,046
1905.....		84,952	12,681	193,464	.....	291,097
1906.....		97,820	9,933	141,078	.....	248,831
1907.....		89,839	12,748	207,769	2,500	312,856
1908.....		11,802	10,103	216,177	.....	238,082
1909.....			4,150	263,893	.....	268,043
1910.....	5,336	18,134	4,503	231,445	.....	259,418
1911.....	31,120	22	3,616	175,586	.....	210,344
1912.....	71,520	30,857	1,185	112,321	.....	215,883
1913.....	86,416	20,436	5,102	195,680	.....	307,634
1914.....	4,775	.....	.....	240,079	.....	244,854
1915.....	3,683	.....	.....	394,429	.....	398,112

Production of Iron Ore in Nova Scotia, 1876-1885.

Calendar Year.	Short tons.	Calendar Year.	Short tons.
1876.....	15,274	1881.....	39,843
1877.....	16,879	1882.....	42,135
1878.....	36,600	1883.....	52,410
1879.....	29,889	1884.....	34,885
1880.....	51,193	1885.....	48,129

EXPORTS AND IMPORTS OF IRON ORE

According to returns received direct from the mine operators, 89,730 tons of ore were shipped to the United States during 1915, as against 60,410 tons in 1914, these being the total shipments outside of Canada. The shipments to destinations outside of Canada in 1913 totalled 216,614 tons, and included 196,151 tons to the United States; 12,927 tons to Scotland, and 7,536 tons to Holland. The Department of Customs reports the exports during the three years as 79,770 tons in 1915; 135,451 tons in 1914, and 126,124 tons in 1913.

There were charged to Canadian blast furnaces in 1915, 1,463,488 tons of imported ores, as compared with 1,324,326 tons in 1914. The annual consumption of imported ores in blast furnaces, which, previous to 1912, was the only record of imports, is shown in the table "Iron Ore, Fuel and Flux charged to Blast Furnaces."

The total quantity of ores thus consumed since 1896 has been 17,444,296 tons. The imported ores charged in 1915 included 840,394 tons from Newfoundland, and 623,094 tons of "Lake Ores."

The imports during 1915, according to the records of the Customs Department, were 1,504,113 tons, valued at \$2,331,755, as compared with 1,147,108 tons, valued at \$2,387,358 imported in 1914. The 1915 imports included 715,060 tons, valued at \$1,568,866 from the United States; 24 tons, valued at \$561 from Great Britain, and 762,328 tons from other countries (Newfoundland).

The iron ore deposits at Wabana, Newfoundland, are owned and operated by the two Canadian companies operating coal mines and steel plants at Sydney and Sydney Mines, Cape Breton. The shipments from the Wabana mines during 1915 were 868,451 short tons, of which 802,128 tons were shipped to Sydney and 66,323 tons to the United Kingdom. The total shipments from Wabana since the mines were first operated in 1895, have amounted to 15,525,636 short tons, of which 9,726,881 tons were sent to Sydney; 2,078,197 tons to the United States, and 3,720,558 tons to Great Britain and Europe. A complete record of the shipments from Wabana is shown in tabular form.

A record of the tonnage of iron ores received from the United States is presented in the Table "Exports of Iron Ore from the United States to

Canada," compiled from "United States Report of Commerce and Navigation." According to this record the exports to Canada during the twelve months ending June, 1915, were 455,869 short tons, valued at \$1,277,247, as against 1,125,090 tons, valued at \$3,401,146, during the previous year.

Exports of Iron Ore, Calendar Years 1893-1915.

Calendar Year.	Short tons.	Value.	Average value.	Calendar Year.	Short tons.	Value.	Average value.
1893.....	2,419	\$ 7,590	\$.14	1904*	168,828	\$ 401,734	\$ 2.38
1894.....	.....	21,294	.....	1905*	168,289	407,881	2.42
1895.....	1,571	3,909	2.49	1906.....	74,778	149,177	2.01
1896.....	1,033	1,911	1.85	1907.....	25,901	45,907	1.77
1897.....	403	811	2.01	1908.....	(a)	.....	.....
1898.....	182	278	1.54	1909.....	21,956	61,934	2.82
1899.....	4,145	9,538	2.30	1910.....	114,499	324,186	2.83
1900.....	5,527	13,511	2.44	1911.....	37,686	133,411	3.54
1901*	306,199	762,283	2.49	1912.....	118,129	382,005	3.23
1902*	428,901	1,065,019	2.48	1913.....	126,124	426,681	3.38
1903*	368,233	922,571	2.51	1914.....	135,451	360,972	2.67
				1915.....	79,770	206,823	2.59

* The export figures for the five years indicated are incorrect owing to a duplication of entries.

(a) The figures of the Trade Report for this year include ferro-products, and are, therefore, omitted.

Imports* of Iron Ore into the United States from Canada, 1893-1915.

Year ending June 30.	Short tons.	Value.	Average value.	Year ending June 30.	Short tons.	Value.	Average value.
1893.....	7,706	\$ 17,186	\$ 2.23	1904.....	126,995	\$ 283,765	\$ 2.23
1894.....	301	736	2.51	1905.....	120,241	245,623	2.04
1895.....	2,681	10,114	3.77	1906.....	113,809	220,112	1.93
1896.....	39	42	3.64	1907.....	34,731	52,765	1.52
1897.....	2,535	5,243	2.07	1908.....	32,124	55,617	1.73
1898.....	1,313	2,904	2.21	1909.....	3,490	12,660	3.63
1899.....	2,585	5,120	1.98	1910.....	36,070	97,984	2.72
1900.....	4,477	5,550	1.24	1911.....	117,393	264,452	2.25
1901.....	34,453	76,159	2.21	1912.....	45,089	89,336	1.98
1902.....	309,527	685,540	2.21	1913.....	159,146	282,434	1.77
1903.....	144,725	320,263	2.21	1914.....	168,703	360,484	2.14
				1915.....	48,513	121,645	2.51

* Compiled from the "Foreign Commerce and Navigation of the United States."

Imports of Iron Ore, 1912-1915.

Calendar Year.	UNITED STATES.		NEWFOUNDLAND.		OTHER COUNTRIES.		TOTAL.	
	Short tons.	Value.	Short tons.	Value.	Short tons.	Value.	Short tons.	Value.
1912 (9*mo)	1,206,567	\$3,090,207	840,892	92	50	\$ 975	2,047,509	\$3,932,074
1913.....	1,072,156	3,007,653	869,669	99	500	502	1,942,325	3,877,824
1914.....	749,979	1,972,550	389,850	850	7,279	24,958	1,147,108	2,387,358
1915.....	715,060	1,568,866	789,029	328	24	561	1,504,113	2,331,755

* Imports of iron ore separately stated in Customs Reports from April 1912 only.

Exports* of Iron Ore from the United States to Canada.

Year ending June 30.	Short tons.	Value.	Average value.	Year ending June 30.	Short tons.	Value.	Average value.
1896	1,270	\$ 4,042	\$ 3.18	1906	254,390	\$ 808,029	\$ 2.39
1897	10,942	34,168	3.12	1907	266,103	670,995	2.52
1898	12,921	34,224	2.65	1908	327,918	880,197	2.68
1899	33,596	60,497	1.80	1909	449,735	1,264,048	2.81
1900	45,237	78,542	1.74	1910	609,617	1,636,917	2.69
1901	67,994	175,689	2.58	1911	826,071	2,496,246	3.01
1902	76,457	178,107	2.45	1912	931,647	2,806,238	3.02
1903	86,258	264,755	3.07	1913	1,367,928	3,684,233	2.69
1904	92,577	252,254	2.72	1914	1,125,090	3,401,146	3.02
1905	264,214	529,454	2.00	1915	435,867	1,277,847	2.90

* Compiled from the "Foreign Commerce and Navigation of the United States."

Annual Shipments of Iron Ore from Wabana Mines, Newfoundland.

Calendar Year.	To Nova Scotia.	To United States.	To Great Britain and Europe.	Total shipments.
	Short tons.	Short tons.	Short tons.	Short tons.
1895	2,686			2,686
1896	17,410	22,778		40,208
1897	12,143	33,039	5,651	50,833
1898	34,622		78,640	113,262
1899	26,311	98,485	214,322	139,118
1900	195,507	153,867	14,776	364,150
1901	457,064	84,292	279,102	820,458
1902	376,322	96,702	341,421	814,445
1903	273,283	90,711	287,793	651,787
1904	342,710	6,025	298,694	647,429
1905	506,819	6,490	255,846	769,155
1906	628,152	141,254	213,867	983,273
1907	672,561	123,972	167,074	963,607
1908	713,772	39,532	200,033	973,337
1909	697,068	241,207	171,722	1,109,997
1910	808,762	247,336	203,528	1,259,626
1911	737,261	207,193	237,009	1,181,463
1912	956,458	191,779	183,673	1,331,910
1913	1,048,433	229,402	328,086	1,605,921
1914	417,409	43,513	172,998	633,920
1915	802,128		66,323	868,451
Total.....	9,726,881	2,078,197	3,720,558	15,525,636

IRON ORE PRICES

The prices of Canadian iron ores are naturally based on prices current in the United States. "Lake ores," that is, those originating in what is generally known as the Lake Superior iron region, and which contribute about 80 per cent of the iron and steel requirements of the United States are, by agreement amongst the principal operators, quoted per gross ton delivered at Lake Erie ports. Ore prices and freights are usually fixed at the beginning of each season and the price of any individual ore then depends on its variation from the standard in iron and phosphorus content, etc.

The urgent demand for iron ore by United States blast furnaces during the later months of 1915 resulted in general buying for 1916 delivery early

in December, and the fixing of prices for the coming season at 75 cents in advance of the 1914 and 1915 quotations, which have been as follows:—

Iron Ore Prices per Gross ton.

	1914 and 1915	1916
Old Range Bessemer.....	\$3.75	\$4.50
Menabi Bessemer	3.50	4.20
Old Range Non-Bessemer.....	3.00	3.75
Menabi Non-Bessemer	2.85	3.55

The base for Bessemer ores is 55% iron natural, and .045% phosphorus dried at 212° F.

The base for Non-Bessemer ores is 51.5% iron natural.

Since 1900 the price for Old Range Bessemer ores has ranged between a minimum of \$3.00 in 1904 and a maximum of \$6.48 in 1900—Non-Bessemer ores being generally from 50 to 80 cents lower.

Ore prices in eastern United States are generally quoted at a rate per unit delivered eastern Pennsylvania points on tidewater. Thus in 1914 and 1915, Newfoundland, Nova Scotia, and New Brunswick ores sold in this market, would bring from 6 to 8 cents per unit, or per cent of iron. The 1916 prices range from 8 to 8½ cents per unit for 50% to 65% ore.

The following record published by the "Iron Trade Review," of Cleveland, O., shows the annual selling price of "Lake iron ore," and the price of pig-iron at the date of buying movement.

Selling Price of Iron Ore and Price of Pig-Iron at Date of Buying Movement.

Season.	Date buying movement.	Season Iron Ore Prices.				Iron Prices Valley.	
		Old range Bessemer.	Menabi Bessemer.	Old range Non-Bessemer.	Menabi Non-Bessemer.	Bessemer.	Foundry Iron No. 2.
1890.	Dec. 1, 1889.	\$ 5.50	no sale	\$3.25	no sale	\$22.15	\$18.15
1891.	June 1, 1891.	4.50	"	4.25	"	15.15	15.00
1892.	Jan. 31, 1892.	4.50	"	3.65	"	15.00	13.65
1893.	Mar. 15, 1893.	3.85	\$3.00	3.20	"	12.65	12.15
1894.	Mar. 1, 1894.	2.75	2.55	2.50	"	9.65	9.65
1895.	Apr. 1, 1895.	2.90	2.19	2.25	\$1.90	9.40	9.40
1896.	May 1, 1896.	4.00	3.50	2.70	2.25	12.40	11.15
1897.	May 20, 1897.	2.60	2.25	2.15	1.90	8.35	8.30
1898.	Mar. 20, 1898.	2.75	2.25	1.85	1.75	9.55	9.80
1899.	Feb. 1, 1899.	3.00	2.40	2.15	2.00	10.30	9.75
1900.	Dec. 15, 1899.	5.50	4.50	4.25	4.00	24.15	22.15
1901.	Apr. 15, 1901.	4.25	3.25	3.00	2.75	16.15	14.40
1902.	Feb. 1, 1902.	4.25	3.25	3.25	2.75	15.90	15.90
1903.	Mar. 20, 1903.	4.50	4.00	3.60	3.20	21.50	21.65
1904.	Apr. 15, 1904.	3.25	3.00	2.75	2.50	13.35	13.15
1905.	Feb. 1, 1905.	3.75	3.50	3.20	3.00	15.50	16.00
1906.	Dec. 5, 1905.	4.25	4.00	3.70	3.50	17.25	17.25
1907.	Nov. 5, 1906.	5.00	4.75	4.20	4.00	21.50	21.50
1908.	June 15, 1908.	4.50	4.25	3.70	3.50	16.00	15.00
1909.	May 10, 1909.	4.50	4.25	3.70	3.50	14.75	14.25
1910.	Dec. 24, 1909.	5.00	4.75	4.20	4.00	19.00	17.25
1911.	Apr. 21, 1911.	4.50	4.25	3.70	3.50	15.00	13.75
1912.	Mar. 20, 1912.	3.75	3.50	3.00	2.85	14.25	13.25
1913.	Nov. 19, 1912.	4.40	4.15	3.60	3.40	17.25	17.50
1914.	May 1, 1914.	3.75	3.50	3.00	2.85	14.00	13.25
1915.	Apr. 19, 1915.	3.75	3.50	3.00	2.85	13.60	12.75
1916.	Dec. 7, 1915.	4.50	4.20	3.75	3.55	18.50	18.00

* U. S. Trade Review, December 16, 1915, p. 1188.

LAKE FREIGHT RATES

The lake freight rates on iron ore from upper lake ports to Lake Erie ports were in 1914 from Escanaba, Mich., 35 cents; from Marquette 45 cents; and from the head of Lake Superior 50 cents. The rates in 1915 were 10 cents per ton lower, or from Escanaba 25 cents; from Marquette 35 cents; and from the head of Lake Superior 40 cents. The rates in 1915 have been increased again to those governing in 1914.

The Marquette rate which covers shipments from Michipicoten has fallen from 94 cents in 1900 to a minimum of 35 cents in 1914.

Shipments from Key Harbour (Moose Mountain ore), have been at the Escanaba rate, or 10 cents lower than Michipicoten.

The above rates are quoted net, there is an additional unloading charge of 10 cents per ton.

IRON ORE PRODUCTION IN THE UNITED STATES

Canada's imports of iron ore from the United States have already been noted. It may be of interest to state that the total production of iron ore in the United States in 1915 was 55,526,490 gross tons, compared with 41,439,761 gross tons in 1914, and 61,980,437 gross tons in 1913, and that

during the past twenty years the Lake Superior district has supplied from 80 to 85 per cent of the total United States production.

PIG-IRON

The total production of pig-iron in 1915 not including the output of ferro-alloys, which is separately tabulated, was 915,775 short tons (815,870 long tons) valued at \$11,374,199, as compared with 783,164 short tons (699,256 long tons), valued at \$10,002,856 in 1914, and 1,128,967 short tons (1,008,006 long tons), valued at \$16,540,012 in 1913. An increase of 16.67 per cent is shown in the production of pig-iron in 1915, as compared with a decrease of over 30 per cent in 1914.

The production in Nova Scotia in 1915 was 420,275 tons, as against 227,052 tons in 1914, an increase of 193,223 tons, or 85 per cent, while the production in Ontario was 493,500 tons in 1915, compared with 556,112 tons in 1914, a decrease of 62,612 tons, or 11 per cent.

Of the total output of pig-iron in 1915, 13,692 tons were made with charcoal as fuel and 900,083 tons with coke. The amount of charcoal pig-iron made in 1914, was 9,380 tons, as against 23,696 tons in 1913 and 21,701 tons in 1912. The quantity made with coke as fuel in 1914 was 773,784 tons, as against 1,105,271 tons in 1913, and 992,886 tons in 1912.

By grades the 1915 production included: Basic 739,613 tons, Bessemer 29,052 tons, Foundry and Malleable, etc., 145,110 tons. The 1914 production included: Basic 346,553 tons, Bessemer 230,817; Foundry and Malleable, etc., 205,794 tons.

The annual production of pig-iron by provinces and by grades is shown in the following tables. The values placed upon the Nova Scotia production are assumed, the greater part of the production being used in the steel plants.

There has been no production of pig-iron in the Province of Quebec during the past four years. Formerly this Province had a continuous though small production of charcoal iron which commanded a high price. The three small furnaces at Radnor Forges and Drummondville, at which this production was made are now reported as abandoned.

Annual Production of Pig-Iron by Provinces, 1887-1915.

Year.	NOVA SCOTIA.		ONTARIO.		QUEBEC.		TOTAL.	
	Short tons.	Value.	Short tons.	Value.	Short tons.	Value.	Short tons.	Value.
1887.....	19,320	\$250,000			5,507	\$116,192	24,827	\$366,192
1888.....	17,556	211,403			4,243	101,832	21,799	313,235
1889.....	21,289	383,202			4,632	116,670	25,921	499,872
1890.....	18,382	262,608			3,390	69,080	21,772	331,688
1891.....	20,840	297,728			3,051	71,173	23,891	368,901
1892.....	34,393	458,556			8,050	178,865	42,443	637,421
1893.....	46,472	553,408			9,475	236,875	55,947	790,283
1894.....	41,344	449,533			8,625	196,914	49,967	646,447
1895.....	35,192	417,083			7,262	169,653	42,454	586,736
1896.....	32,351	400,829	28,302	\$368,942	6,615	154,358	67,268	924,129
1897.....	22,500	230,000	26,115	291,466	9,392	217,235	58,007	738,701
1898.....	21,627	221,677	48,253	530,789	7,135	159,929	77,015	912,395
1899.....	31,100	404,300	64,749	808,157	7,094	164,849	102,943	1,377,306
1900.....	28,133	421,995	62,387	938,725	6,055	140,978	96,575	1,501,698
1901.....	151,130	1,764,017	116,371	1,599,413	6,875	149,493	274,376	3,512,923
1902.....	237,244	2,477,767	112,688	1,584,273	7,970	181,501	357,902	4,243,541
1903.....	201,246	2,186,273	87,004	1,345,464	9,635	210,973	297,885	3,742,710
1904.....	164,488	1,700,130	127,845	1,746,126	11,121	241,729	303,454	3,687,985
1905.....	261,014	2,440,722	256,704	3,868,197	7,588	166,267	525,306	6,475,186
1906.....	315,008	3,439,217	275,558	4,338,275	7,845	177,644	598,411	7,955,136
1907.....	366,456	4,211,913	275,459	4,581,309	10,047	232,004	651,962	9,125,226
1908.....	352,642	3,554,540	271,484	4,385,271	6,709	171,383	630,835	8,111,194
1909.....	345,380	3,453,800	407,012	6,002,441	4,770	125,623	757,162	9,581,864
1910.....	350,287	4,203,444	447,273	6,956,923	3,237	85,255	800,797	11,245,622
1911.....	390,242	4,682,904	526,635	7,606,939	658	17,282	917,535	12,307,125
1912.....	424,994	6,374,910	589,593	8,176,089			1,014,587	14,550,999
1913.....	480,068	7,201,020	648,899	9,338,992			1,128,967	16,540,012
1914.....	227,052	2,951,676	556,112	7,051,180			783,164	10,002,856
1915.....	420,275	5,463,575	493,500	5,910,624			913,775	11,374,199

Annual Production of Pig-Iron by Grades, and by Fuels.

IN SHORT TONS.

Year.	BY GRADES.			BY FUELS.	
	Basic.	Bessemer.	Foundry and all other.	Charcoal.	Coke.
1909.....	400,921	222,931	133,310	17,003	740,159
1910.....	425,400	219,492	155,905	17,164	783,633
1911.....	464,221	208,626	244,688	20,759	896,776
1912.....	544,534	256,191	213,862	21,701	992,886
1913.....	614,845	265,685	248,437	23,696	1,105,271
1914.....	346,553	230,817	205,794	9,380	773,784
1915.....	739,613	29,052	145,110	13,692	900,083

Monthly Prices of Foundry Pig-Iron at Montreal.*

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
January.....	\$17.50	\$20.25	\$21.00	\$18.00	\$18.50	\$21.00	\$19.75	\$22.00	\$19.75	\$19.35
February.....	18.00	20.50	21.00	18.00	18.50	21.00	19.00	22.00	19.75	19.35
March.....	19.00	20.50	22.00	18.00	18.50	21.00	19.00	22.00	19.75	19.10
April.....	18.75	21.50	20.00	18.00	19.00	21.00	18.50	22.00	19.75	19.90
May.....	18.00	21.50	19.00	18.75	19.00	19.25	18.50	22.00	19.75	19.90
June.....	18.00	21.50	18.75	18.75	18.50	19.25	18.50	21.50	19.75	19.90
July.....	18.00	21.50	18.75	18.50	18.50	19.25	18.50	20.50	19.50	19.90
August.....	18.50	21.75	18.00	18.50	18.00	19.25	19.00	20.50	19.50	19.90
September.....	18.75	21.75	18.00	18.50	18.00	19.25	20.00	20.50	19.50	20.00
October.....	18.75	21.50	17.75	19.00	21.00	19.25	20.50	20.50	19.50	20.00
November.....	19.00	21.00	18.00	19.00	21.00	19.25	20.50	19.75	19.40	21.00
December.....	19.25	20.50	18.25	19.00	21.00	19.25	21.50	19.75	19.40	22.00
Average.....	18.46	21.15	19.21	18.50	19.13	19.83	19.44	21.17	19.61	20.10

* No. 1 Foundry Pig-Iron, f.o.b. cars Montreal, price per ton of 2,240 pounds on the opening market-day of each month. Quotation furnished by The Dominion Iron & Steel Co., Ltd.

Average Monthly Price of Bessemer Pig-Iron at Pittsburgh.*

PER GROSS TON (2240 POUNDS).

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
January.....	\$18.35	\$23.15	\$19.00	\$17.34	\$19.90	\$15.90	\$15.05	\$18.15	\$14.96	\$14.70
February.....	18.35	22.85	17.90	16.78	19.34	15.90	15.90	18.15	15.09	14.63
March.....	18.28	22.85	17.86	16.25	18.60	15.90	15.09	18.15	15.09	14.55
April.....	18.19	23.35	17.49	15.78	18.27	15.90	15.15	17.90	14.90	14.55
May.....	18.10	24.01	16.93	15.84	17.52	15.90	15.13	17.70	14.90	14.55
June.....	18.23	24.27	16.90	16.05	16.60	15.90	15.15	17.14	14.90	14.58
July.....	18.41	23.55	16.83	16.46	16.40	15.90	15.20	16.70	14.90	14.88
August.....	19.00	22.90	16.23	17.03	16.09	15.90	15.46	16.52	14.90	15.89
September.....	19.54	22.90	15.90	18.05	15.90	15.90	16.15	16.65	14.90	16.80
October.....	20.35	22.00	15.71	19.53	15.90	15.44	17.80	16.60	14.84	16.95
November.....	22.85	20.65	16.59	19.90	15.82	15.00	18.02	16.02	14.59	17.45
December.....	23.75	19.34	17.40	19.90	15.90	15.03	18.15	15.77	14.70	19.50

* From the Iron Age.

Average Monthly Price of Grey Forge Pig-Iron at Pittsburgh.

PER GROSS TON (2240 POUNDS).

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
January.....	\$17.30	\$22.58	\$17.00	\$15.40	\$17.40	\$14.09	\$13.40	\$17.15	\$13.65	\$13.45
February.....	17.29	22.20	15.99	15.09	17.02	14.27	13.40	17.15	13.65	13.45
March.....	16.91	21.76	15.90	14.65	16.15	14.40	13.40	16.92	13.65	13.45
April.....	16.66	21.72	15.45	14.40	16.09	14.40	13.65	16.17	13.65	13.40
May.....	16.49	22.88	14.90	14.40	15.90	14.27	13.78	15.17	13.65	13.20
June.....	16.35	23.15	14.90	14.77	15.20	14.00	13.90	14.71	13.65	13.20
July.....	16.41	22.96	14.90	14.85	14.52	13.90	13.90	14.55	13.65	13.20
August.....	17.75	21.90	14.71	15.21	14.30	13.90	14.15	14.25	13.65	14.20
September.....	18.35	21.15	14.46	16.15	14.15	13.84	14.65	14.25	13.65	14.95
October.....	19.47	20.40	14.40	17.02	14.15	13.65	16.18	14.26	13.58	15.07
November.....	22.45	19.17	14.90	17.27	14.09	13.47	16.50	14.25	13.45	15.84
December.....	22.85	18.40	15.25	17.40	13.90	13.40	17.15	13.95	13.40	18.15

* From the Iron Age.

Previous to 1896 pig-iron was made entirely from Canadian ores. Since that date, however, increasing quantities of imported ore have been used as well as imported fuels and fluxes, and in 1915 about 83 per cent of the ore charged, 46 per cent of the coke, and a large proportion of the limestone were imported. The iron industry at Sydney and North Sydney has been built up on the basis of the Newfoundland Wabana ores and the local coal supply, while in recent years a portion of the limestone required has also been obtained from Port au Port, Newfoundland. In Ontario large quantities of United States "Lake ores" are used, the imported ores charged being 623,094 tons, and Canadian ores 293,305 tons, in 1915. All the fuel used, with the exception of a small quantity of charcoal, was imported either as coke, or as coal, for charging the by-product coke ovens at Sault Ste. Marie. A portion of the limestone flux is also obtained from quarries situated in the United States.

Iron Ore, Fuel, and Flux charged to Blast Furnaces.

Calendar Year.	IRON ORE CHARGED.		FUEL CHARGED.				Limestone.
	Canadian.	Imported.	Charcoal.	*Coke from Canadian coal.	Coke imported or made from imported coal.		
	Short tons.		Bushels.	Short tons.	Short tons.	Short tons.	
1887.	60,434		940,400	33,581		17,171	
1888.	54,956		804,286	30,228		16,857	
1889.	65,670		755,800	36,333		22,122	
1890.	57,304		589,860	34,073		18,478	
1891.	60,933		441,812	32,796		11,377	
1892.	96,948		1,121,365	52,622		22,967	
1893.	124,053		1,302,720	65,332		27,797	
1894.	108,871		1,173,970	60,026		31,585	
1895.	93,208		789,561	51,629		37,462	
1896.	96,560	46,300	756,600	50,067	33,990	31,273	
1897.	53,658	55,722	1,031,800	35,800	27,810	33,913	
1898.	57,881	77,107	836,400	31,952	50,407	51,826	
1899.	66,384	120,650	1,928,025	44,844	64,648	52,966	
1900.	71,341	112,042	1,799,737	45,021	59,345	169,399	
1901.	156,613	361,010	1,835,736	207,835	115,367	293,594	
1902.	125,664	559,381	2,146,623	362,208	112,314	277,452	
1903.	82,035	485,911	2,322,030	350,190	96,540	211,278	
1904.	180,932	454,671	3,477,470	257,182	130,210	369,715	
1905.	116,974	861,847	4,404,394	365,897	243,882	456,036	
1906.	221,733	982,740	2,168,476	462,672	304,676	488,462	
1907.	244,104	1,117,260	1,682,085	521,068	327,082	483,065	
1908.	209,266	1,051,445	1,121,990	492,076	325,670	526,076	
1909.	231,994	1,235,000	1,779,258	412,016	507,255	569,355	
1910.	149,505	1,377,035	1,615,919	491,281	476,838	625,216	
1911.	67,434	1,628,368	1,960,459	543,933	377,388	705,613	
1912.	71,588	2,019,165	1,886,748	609,183	656,815	630,119	
1913.	139,436	2,110,828	2,206,191	710,260	706,888	447,641	
1914.	182,964	1,324,326	920,045	330,269	590,902	573,743	
1915.	293,305	1,463,488	1,314,957	578,743	486,022		

* Includes for the first ten years small quantity of coal.

IRON BLAST FURNACES IN CANADA IN 1915

Iron Blast Furnaces in Canada in 1915.—Of 22 completed furnaces, 13 were in blast in 1915 for varying periods of time. The total daily capacity of the 22 furnaces is about 4,780 tons. The operating companies, with numbers and capacities of furnaces were as follows:—

Dominion Iron & Steel Co., Sydney, C.B.—Six completed furnaces of 280 tons capacity each per day; two operated throughout 1915; one for 36 days, one for 179 days and one for 348 days; one furnace idle throughout the year.

Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.—One furnace at Sydney Mines, C.B., of 200 tons capacity; operated throughout 1915.

Londonderry Iron & Mining Co., Ltd., Londonderry, N.S.—One furnace of 100 tons capacity; idle throughout the year.

Canada Iron Foundries, Ltd., Montreal, Que.—Two small furnaces of seven and eight tons capacity, at Drummondville, Que. (abandoned); one furnace of 24 tons daily capacity, at Radnor Forges, Que. (abandoned); two furnaces of 125 tons and 250 tons at Midland, Ont.: all idle throughout the year.

Standard Iron Co. of Canada, Ltd., Deseronto, Ont.—One furnace at Deseronto with a daily capacity of 65 tons, operated for 275 days during the year 1915: one furnace of 65 tons at Parry Sound, idle throughout the year.

The Steel Co. of Canada, Ltd., Hamilton, Ont.—Two furnaces, one of 260 tons capacity, operated for 52 days in 1915; a second furnace of 430 tons capacity, operated throughout the year.

Algoma Steel Co., Ltd., Sault Ste. Marie, Ont.—Three furnaces at Steelton, near Sault Ste. Marie, two of 280 tons capacity each, and one of 500 tons capacity, operated throughout the year.

The Atikokan Iron Co., Ltd., Port Arthur, Ont.—One furnace of 175 tons capacity, idle throughout the year.

The Canadian Furnace Co., Ltd., Port Colborne, Ont.—One furnace of 325 tons capacity, operated 262 days in 1915.

EXPORTS AND IMPORTS OF PIG-IRON

The total exports of pig-iron and ferro-alloys during 1915 were 26,545 tons, and included 17,307 tons of pig-iron valued at \$231,551, or an average of \$13.38 per ton, and 9,238 tons of ferro-alloys valued at \$537,081 or an average of \$58.14 per ton.

The exports between 1905 and 1913 did not exceed 10,000 tons in any one year, and consisted largely, if not entirely, of ferro-alloys. During 1914, however, there was a small export of pig-iron chiefly from Sydney to Philadelphia. The exports during the first three months of the year were 4,431 tons, which probably included about 4,000 tons of pig-iron. From

the first of April the exports were separately classified and during the last nine months of the year included 9,767 tons of pig-iron valued at \$118,111, or an average of \$12.09 per ton, and 4,865 tons of ferro-alloys valued at \$285,221, or an average of \$58.63 per ton.

Considerable quantities of pig-iron are annually imported into Canada. During the calendar year 1915, the total imports of pig-iron excluding ferro-products which are separately stated, were 47,482 tons, valued at \$624,200, and included 46,894 tons, valued at \$615,268, or an average of \$13.12 per ton from the United States, and 588 tons valued at \$8,932, or an average of \$15.19 per ton from Great Britain.

During the calendar year 1914 the total imports of pig-iron were 78,680 tons, valued at \$982,189, and included 69,254 tons valued at \$862,598, or an average of \$12.46 per ton, from the United States; and 9,426 tons, valued at \$119,591, or an average of \$12.68 per ton, from Great Britain.

Annual Exports of Pig-Iron and Ferro-alloys, 1896-1915.

Calendar Year.	Tons.	Value.	Average value.	Calendar Year.	Tons.	Value.	Average value.
1896	2,187	\$55,448	\$25.35	1905	866	\$22,284	\$25.73
1897	3,099	81,381	26.26	1906	305	7,429	24.36
1898	1,278	32,645	25.54	1907	439	13,504	30.76
1899	6,981	149,190	21.37	1908	290	10,614	36.60
1900	3,513	88,052	25.06	1909	5,063	186,778	36.89
1901	57,650	593,739	10.30	1910	9,763	296,310	30.35
1902	75,195	778,619	10.35	1911	5,870	271,968	46.33
1903	4,400	78,382	17.81	1912	6,976	310,702	44.54
1904	21,016	200,363	9.53	1913	6,326	351,646	55.59
				1914	19,063	486,366	25.51

Calendar Year.	PIG-IRON.			FERRO-ALLOYS.		
	Short tons.	Value.	Average value.	Short tons.	Value.	Average value.
1915	17,307	\$231,551	\$13.40	9,238	\$537,081	\$58.14

Annual Imports of Pig-Iron showing Country of Origin.

	UNITED STATES.			GREAT BRITAIN.			OTHER COUNTRIES.		
	Short tons.	Value.	Value per ton.	Short tons.	Value.	Value per ton.	Short tons.	Value.	Value per ton.
1908.....	26,434	\$448,794	\$16.98	30,574	\$414,116	\$13.54	335	\$8,705	\$25.99
1909.....	50,167	735,138	14.65	87,394	1,035,799	12.08	364	7,255	19.93
1910.....	107,984	1,516,685	14.05	119,678	1,603,951	13.40	91	2,059	22.63
1911.....	122,360	1,552,896	12.69	86,125	1,058,078	12.29	2	15	7.50
1912.....	210,756	2,590,117	12.33	61,809	912,482	14.76			
1913.....	213,969	2,888,974	13.50	22,800	358,431	15.72			
1914.....	69,254	862,598	12.46	9,426	119,591	12.68			
1915.....	46,894	615,268	13.12	588	8,932	15.19			

Annual Imports of Pig-Iron since 1880.

Year.	PIG-IRON.			CHARCOAL PIG-IRON.			TOTAL.	
	Short tons.	Value.	Average value.	Short tons.	Value.	Average value.	Short tons.	Value.
1880(c).....	(a) 23,159	\$371,956	\$16.06				23,159	\$371,956
1881.....	(a) 43,630	715,997	16.41				43,630	715,997
1882.....	56,594	811,221	14.33	6,837	\$211,791	\$30.98	63,431	1,023,012
1883.....	75,295	1,085,755	14.42	2,198	58,994	26.84	77,493	1,144,749
1884.....	49,291	653,708	13.26	2,893	66,602	23.02	52,184	723,010
1885.....	42,279	545,426	12.90	1,119	27,333	24.43	43,398	572,759
1886.....	42,463	528,483	12.45	3,185	60,086	18.87	45,648	588,569
1887.....	46,295	554,388	11.98	3,919	77,420	19.76	50,214	631,808
1888.....	(b) 48,973	648,012	13.23				48,973	648,012
1889.....	(b) 72,115	864,752	11.99				72,115	864,752
1890.....	(b) 87,613	1,148,078	13.10				87,613	1,148,078
1891.....	(b) 81,317	1,085,929	13.35				81,317	1,085,929
1892.....	(b) 68,918	886,485	12.86				68,918	886,485
1893.....	56,849	682,209	12.00	5,944	84,358	14.19	62,793	766,567
1894.....	42,376	483,787	11.42	2,906	34,968	12.03	45,282	518,755
1895.....	31,637	341,259	10.80	2,780	31,171	11.21	34,417	372,430
1896.....	36,131	394,591	10.92	917	11,726	12.79	37,048	406,317
1897.....	25,766	291,788	11.32	2,936	35,373	12.05	28,702	327,161
1898.....	37,186	382,103	10.28	2,250	23,533	10.46	39,436	405,636
1899.....	44,261	452,911	10.23	1,955	19,123	9.78	46,216	472,034
1900.....	49,767	811,490	16.31	1,816	38,736	21.33	51,583	850,226
1901.....	35,293	548,033	15.53	490	7,121	14.53	35,783	555,154
1902.....	39,978	585,077	14.64	38	726	19.11	40,016	585,803
1903.....	91,730	1,338,574	14.59	582	16,352	18.54	92,612	1,354,926
1904.....	62,515	894,728	14.31				62,515	894,728
1905.....	71,005	857,879	12.08				71,005	857,879
1906(c).....	96,797	1,401,047	14.47				96,797	1,401,047
1907(d).....	249,582	4,117,887	16.50	2,062	41,806	20.27	251,644	4,159,693
1908.....	57,343	871,615	15.20	1,022	18,818	18.41	58,365	890,433
1909.....	137,925	1,798,192	13.04	413	5,727	13.87	138,338	1,803,919
1910.....	227,753	3,122,695	13.71	16,106	242,152	15.03	243,859	3,364,847
1911.....	208,487	2,610,989	12.52				208,487	2,610,989
1912.....	272,565	3,511,599	12.88	115	1,370	11.91	272,680	3,512,969
1913.....	235,843	3,234,877	13.72	926	12,528	13.53	236,769	3,247,405
1914.....	78,594	981,107	12.48	86	1,082	12.58	78,680	982,189
1915(d).....	47,482	624,200	13.15				47,482	624,200

(a) Comprises pig-iron of all kinds.

(b) These figures appear in Customs reports under heading "iron in pigs, iron kentledge, and cast iron."

(c) Year ending June 30 from 1780 to 1906 inclusive.

(d) Calendar year from 1907 to date.

FERRO-PRODUCTS

Ferro-silicon and ferro-phosphorus were produced in Canada in electric smelting plants during 1915, the latter in small quantities only. Ferro-silicon, 50 per cent, 75 per cent, and 85 per cent, was made at Welland, Ont., by the Electro-Metals, Ltd., and ferro-phosphorus at Buckingham, Que., by the Electric Reduction Co., Ltd.

The total production of ferro-alloys during 1915, was 10,794 tons, valued at \$753,404, as against a production of 7,524 tons, valued at \$478,355 in 1914, and 8,075 tons, valued at \$493,018 in 1913. In 1912 the production was 7,834 short tons, valued at \$465,225, and in 1911, 7,507 short tons valued at \$376,404.

The exports of ferro-products were formerly included with pig-iron, but have been separately tabulated since April 1, 1914. During the nine months ending December, 1914, the exports of ferro-silicon and other ferro-products, as already stated, were 4,865 tons, valued at \$285,221, and during the twelve months ending December, 1913, 9,238 tons valued at \$537,081.

The imports of ferro-silicon, ferro-manganese, etc., during the calendar year 1915, were 13,758 tons, valued at \$807,312, or an average of \$58.68 per ton, as compared with imports during the calendar year 1914 of 22,147 tons, valued at \$549,485, or an average of \$24.81 per ton.

Imports of Ferro-Manganese, Ferro-Silicon, etc.

Fiscal Year.	Short tons.	Value.	Average value.	Fiscal Year.	Short tons.	Value.	Average value.
*1887.....	123	\$1,435	\$11.67	1903.....	6,350	\$162,710	\$25.62
1888.....	1,883	29,812	15.83	1904.....	2,975	75,554	25.40
1889.....	5,868	72,108	12.29	1905.....	12,935	246,815	19.08
1890.....	696	18,895	27.15	1906.....	15,023	462,739	30.80
1891.....	2,707	40,711	15.04	Calendar Year.			
1892.....	1,311	23,930	18.25	1907.....	15,437	536,285	34.74
1893.....	529	15,858	29.98	1908.....	11,718	401,761	34.29
*1894.....	284	9,885	34.81	1909.....	17,699	411,536	23.25
†1895.....	164	5,408	32.98	1910.....	18,900	464,741	24.59
1896.....	652	12,811	19.65	1911.....	17,226	429,465	24.93
1897.....	426	9,233	21.67	1912.....	19,810	469,884	23.72
1898.....	1,418	22,516	15.88	1913.....	30,355	990,443	30.98
1899.....	1,160	22,530	19.43	1914.....	22,147	549,485	24.81
1900.....	1,149	39,064	34.00	†1915.....	13,758	807,312	58.68
1901.....	1,512	38,954	25.76				
1902.....	6,513	150,977	23.18				

* From 1887 to 1894 inclusive. These amounts include: ferro-manganese, ferro-silicon, spiegel, steel bloom ends and crop ends of steel rails, for the manufacture of iron and steel.

† From 1895 to date. Ferro-silicon, spiegeleisen, and ferro-manganese.

CONSUMPTION OF PIG-IRON AND FERRO-ALLOYS

The total quantity of pig-iron and ferro-alloys used in Canada arrived at by adding to the production, the excess of imports over exports amounted

in 1915 to 959,254 tons. Of this amount 762,055 tons were used in steel furnaces, leaving 197,199 tons for foundry and other uses.

The greatest consumption was reached in 1913, with 1,397,840 tons of which 943,130 tons were used in steel furnaces and 454,710 tons available for other uses.

Consumption of Pig-Iron and Ferro-alloys.

Year.	Used in steel furnace*		Available for foundry and other uses.	Total consumption.* Short tons.
	Pig-iron.	Ferro-alloys.		
1910.....	690,913	8,143	361,914	1,060,970
1911.....	700,679	21,359	422,847	1,144,885
1912.....	735,559	24,237	548,026	1,307,820
1913.....	913,722	29,408	454,710	1,397,840
1914.....	619,030	20,252	233,170	872,452
1915.....	748,114	13,941	197,199	959,254

* Production of pig-iron and ferro-alloys plus excess of imports over exports.

WORLD'S PRODUCTION OF PIG-IRON

The United States is the largest producer of pig-iron, Germany the second largest, and Great Britain third. Canada's output was between one and two per cent only of the total which in 1915 amounted to nearly 63,500,000 gross tons.

The production in principal countries is shown in the following table:—

World's Production of Pig-Iron.

(IN LONG TONS.)

	1850*	1890*	1900*	1910*	1914	1915
United States.....	563,755	9,202,703	13,789,242	27,303,567	23,332,244	29,916,213
Germany.....	350,000	4,584,882	8,381,373	14,559,509	14,163,000	11,680,000
Great Britain.....	2,300,000	7,904,214	8,959,691	10,012,098	9,005,898	8,793,659
France.....	405,653	1,931,188	2,669,966	3,974,478	4,946,000	4,675,000
Russia.....	227,555	912,561	2,889,789	2,922,058	4,194,000	3,638,000
Austria-Hungary.....	250,000	910,685	1,472,695	2,153,788	1,988,000	1,929,000
Belgium.....	144,452	775,385	1,001,872	1,822,821	1,535,000	.....
Canada.....	.....	19,439	86,090	740,210	699,256	815,870
Sweden.....	150,000	483,155	518,263	594,385	625,000	758,000
Spain.....	.....	176,598	289,315	367,423	428,000	412,000
Italy.....	.....	14,094	23,569	347,657	379,000	389,000
Other countries.....	10,000	80,000	100,000	400,000	487,000	472,000
	4,401,415	26,904,904	40,181,865	65,268,994	61,782,398	63,478,742

* From "Metal Statistics," 1916, published by The American Metal Market Co.

STEEL.

The production of steel ingots and castings in 1915 was 1,012,926 tons, as compared with 828,641 tons in 1914, and 1,168,993 tons in 1913. Compared with the previous year there was an increase in total production in 1915 amounting to 184,285 tons, or 22 per cent. The 1915 production included: open-hearth ingots 962,411 tons; Bessemer ingots 19,448 tons; electric steel and other ingots 7,970 tons; direct open-hearth castings 28,384 tons; other steel castings 2,683 tons. The total production of steel in electric furnaces was 5,625 tons. The 1914 production included: open-hearth ingots 608,383 tons; Bessemer ingots 203,184 tons; direct open-hearth castings 15,315 tons; other steel castings 1,759 tons. The production of steel in electric furnaces reported was 61 tons.

Statistics of the production of steel ingots and castings since 1894 are given in the following table, the figures for 1894 to 1906 inclusive having been collected and published by the American Iron and Steel Association; those for the years 1907 to 1915 have been collected by this Department.

Annual Production of Steel Ingots and Castings.

(IN SHORT TONS.)

Year.	STEEL INGOTS.			STEEL CASTINGS.			Total Ingots and Castings.
	Open- hearth.	Bessemer.	Total Ingots.	Open- hearth.	Other steels.	Total Castings.	
1894.....							28,767
1895.....							19,040
1896.....							17,920
1897.....							20,608
1898.....							24,125
1899.....							24,640
1900.....							26,406
1901.....							29,214
1902.....			197,959			5,922	203,881
1903.....			198,249			5,047	203,296
1904.....			159,352			7,286	166,638
1905.....			441,342			10,521	451,863
1906.....			622,623			16,773	639,396
1907.....	459,240	225,989	685,229	20,602	1,151	21,753	706,982
1908.....	443,442	135,557	578,999	9,051	713	9,764	588,763
1909.....	535,988	203,715	739,703	14,013	1,003	15,016	754,719
1910.....	580,932	222,668	803,600	18,085	599	18,684	822,284
1911.....	651,676	209,817	861,493	20,163	740	20,903	882,396
1912.....	692,236	231,044	923,280	31,845	2,556	34,401	957,681
1913.....	824,818	301,932	1,126,750	39,217	3,026	42,243	1,168,993
1914.....	608,383	203,184	811,567	15,315	1,759	17,074	828,641
1915.....	962,411	19,448	981,859	28,384	2,683	31,067	1,012,926

Materials Charged to Steel Furnaces.—The total quantity of pig-iron used in steel furnaces during 1915 was 748,114 tons, of which 724,735 tons were produced by the firms reporting and 23,379 tons purchased. The quantity of ferro-alloys used was 13,941 tons purchased. Scrap v used to the extent of 413,266 tons. Ores used included 908 tons of mangan-

see, and 74,872 tons of iron ore, while 252,045 tons of limestone or dolomite were used, and 13,520 tons of fluorspar. In Ontario about 823 million cu. ft., of natural gas were used, while in Nova Scotia coke oven gas was used at Sydney, of which a record of quantity was not obtained.

A record of materials used in steel furnaces covering the past six years is shown in the following table:—

Pig-Iron, Scrap Iron, and Other Materials Charged to Steel Furnaces.

(IN SHORT TONS.)

Year.	Pig-Iron.	Ferro-alloys.	Scrap iron.	Iron ore.	Manganese ore.	Fluorspar.	Limestone and dolomite.
1910.....	690,913	8,143	211,453	39,332	1,317	7,461	144,116
1911.....	700,769	21,359	278,797	42,892	829	8,067	170,270
1912.....	735,559	24,237	336,265	43,006	985	9,709	148,045
1913.....	913,722	29,408	406,403	55,018	1,342	10,687	197,028
1914.....	619,030	20,252	286,863	37,686	723	7,845	114,859
1915.....	748,114	13,941	413,266	74,872	908	13,520	252,045

It will be noted that there is a large consumption of scrap iron and steel in the manufacture of steel ingots and castings. Trade records show a considerable import and export of these materials as illustrated in the accompanying tables.

The exports of scrap iron and steel in 1915, are reported as 89,358 tons, valued at \$883,134, or an average of \$9.88 per ton, as against exports in 1914 of 35,405 tons, valued at \$446,337, or an average of \$12.60 per ton. The exports in 1915 were the largest that have been recorded, and the annual exports during the past sixteen years have averaged about 20,000 tons.

The total imports of scrap iron and steel in 1915 were 11,477 tons, valued at \$127,614, or an average of \$11.12 per ton, as against imports in 1914 of 27,688 tons, valued at \$337,406, or an average of \$12.19 per ton, and imports in 1913 of 104,747 tons, valued at \$1,488,255, or an average of \$14.21 per ton. The imports during 1913 were the largest recorded, and the average annual imports during the past seventeen years have been about 45,000 tons.

Annual Exports of Scrap Iron and Steel.

Calendar Year.	Short tons.	Value.	Value per ton.	Calendar Year.	Short tons.	Value.	Value per ton.
1900.....	12,548	\$257,868	\$20.55	1908.....	4,628	\$73,807	\$15.95
1901.....	9,718	168,438	17.33	1909.....	20,325	305,256	14.87
1902.....	6,691	135,463	20.25	1910.....	11,663	171,603	14.71
1903.....	6,563	88,839	13.54	1911.....	4,208	54,618	12.99
1904.....	7,859	76,125	9.69	1912.....	16,632	145,250	8.73
1905.....	24,109	240,105	9.96	1913.....	45,556	483,813	10.62
1906.....	12,947	235,913	18.22	1914.....	35,405	446,337	12.60
1907.....	11,461	185,430	16.18	1915.....	89,358	883,134	9.88

Annual Imports of Scrap Iron and Steel.

Fiscal Year.	Cast Scrap Iron.			Iron or steel, scrap, wrought, being waste or refuse, including punchings, cuttings, and clippings of iron or steel plates or sheets, having been in actual use, crop ends of tin plate, bars, blooms and rails the same not having been in actual use.			Scrap iron and scrap steel, old and fit only to be remanufactured, being part of or recovered from any vessel wrecked in waters subject to the jurisdiction of Canada.			Total.
	Short tons.	Value.	Per ton.	Short tons.	Value.	Per ton.	Short tons.	Value.	Per ton.	
1893.....	729	\$9,317	\$12.78	45,459	\$574,809	\$12.64	46,188	.....	.....	\$ 584,126
1894.....	78	771	9.88	30,850	369,682	11.98	30,928	.....	.....	370,453
1895.....	643	4,347	6.76	23,390	244,388	10.45	24,033	.....	.....	248,735
1896.....	93	741	7.97	13,607	157,996	11.61	13,700	.....	.....	148,697
1897.....	238	1,362	5.72	7,903	93,541	11.84	8,141	.....	.....	94,683
1898.....	1,550	13,251	8.50	48,769	533,628	10.94	50,319	8,949	8.74	547,823
1899.....	2,379	22,594	9.50	28,297	298,219	10.54	30,676	3,049	55.44	323,962
1900.....	13,777	150,681	10.96	39,566	635,681	16.06	53,343	3,497	20.94	587,130
1901.....	4,499	51,032	11.34	17,472	231,582	13.26	21,971	2,607	7.60	234,153
1902.....	3,048	38,058	12.48	12,478	150,398	12.04	15,526	1,511	14.51	165,917
1903.....	11,737	149,038	12.70	43,776	668,971	15.53	55,513	1,431	38.64	764,430
1904.....	16,533	199,933	12.10	70,969	898,196	12.65	87,502	1,610	10.52	944,729
1905.....	4,866	75,523	15.52	15,433	210,561	13.63	19,296	339	9.42	226,421
1906.....	13,852	198,686	14.34	21,098	325,269	15.42	32,196	1,220	9.76	336,575
1907 ^a	26,371	458,489	13.50	25,498	412,666	16.18	50,896	6,197	10.33	569,549
1908.....	15,190	202,842	13.35	32,825	506,698	15.43	48,015	69,213	17.62	617,549
1909.....	12,621	183,578	12.17	15,136	140,875	12.78	27,767	26,212	2.50	345,469
1910.....	20,522	266,626	12.99	30,894	408,075	13.21	51,478	7,300	11.77	615,451
1911.....	34,831	406,154	11.66	43,544	547,942	12.58	78,378	3	1.58	954,234
Calendar Year	49,874	659,319	13.22	54,869	828,860	15.10	104,743	76	29.54	1,488,253
1913.....	10,162	118,299	11.64	17,446	218,553	12.53	27,608	89	5.54	337,498
1914.....	5,136	53,778	10.47	5,912	71,859	12.15	11,477	1,977	4.61	127,644
1915.....										

^a 9 moe.

Prices of Steel Billets.—A record of monthly prices of mild steel billets at Montreal as quoted by the Dominion Iron and Steel Co., is shown in an accompanying table.¹

During 1915 the prices gradually increased during the year, quotations in January and February being from \$24.50 to \$25.00 per long ton, and in December from \$33 to \$35 per long ton, the latter being the highest price reached since 1907.

In Pittsburgh, open-hearth steel billets averaged \$19.50 per long ton during the first five months of the year, increasing steadily during the following seven months to a maximum average of \$30.20 per long ton in December. The price of Bessemer billets followed practically the same changes.

Monthly Prices of Mild Steel Billets at Montreal.*

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
January.....	\$25 75	\$28 75	\$30 00	\$26 00	\$26 50	\$27 00	\$24 75	\$26 50	\$24 50	\$24 75
February.....	25 00	34 00	30 75	26 00	26 50	27 00	23 75	30 00	24 50	24 75
March.....	25 25	34 50	31 00	26 25	26 50	27 00	23 75	30 00	24 50	26 50
April.....	25 25	34 75	30 75	26 25	26 50	27 00	23 75	30 00	25 25	26 50
May.....	27 00	35 25	31 75	26 25	26 50	26 75	23 75	31 00	25 25	26 50
June.....	27 00	34 50	33 75	26 50	26 00	25 75	23 75	31 00	25 25	26 50
July.....	27 25	34 00	26 75	26 50	26 00	25 75	23 75	29 00	25 25	26 50
August.....	28 00	34 50	27 00	26 50	25 50	25 00	24 75	28 00	25 25	29 50
September.....	27 75	34 00	27 00	26 25	25 50	23 75	25 25	26 50	25 25	31 00
October.....	28 25	33 75	27 25	26 25	25 50	23 75	25 25	25 50	24 75	32 00
November.....	29 75	34 25	27 00	26 25	24 75	24 75	25 25	25 50	24 75	32 00
December.....	29 50	35 00	26 75	26 50	25 00	24 75	26 00	25 50	24 75	34 00
Average.....	27.15	33.94	29.15	26.20	25.91	25.71	24.40	28.50	25.23	28.20

* Average price per ton of 2,240 pounds, f.o.b. Montreal in the first week of each month, quotations supplied by the Dominion Iron & Steel Co., Ltd.

Average Monthly Prices of Bessemer Steel Billets at Pittsburgh.*

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
January.....	\$26 25	\$29 40	\$28 00	\$25 00	\$27 50	\$23 00	\$20.00	\$28 30	\$20.13	\$19.25
February.....	26 50	29 50	28 00	25 00	27 50	23 00	20 00	28 50	21.00	19.50
March.....	26 70	29 00	28 00	23 00	27 50	23 00	19 75	28 50	21.00	19.70
April.....	27 00	30.12	28 00	23 00	26.75	23 00	20 00	28 50	20.80	20 00
May.....	26 40	30.30	28 00	23 00	26.12	22.60	20.80	27.37	20.00	20 00
June.....	26 63	29 62	25 75	23 00	25 30	21 00	20 87	26 50	19.50	20 50
July.....	27 25	30 00	25 00	23 50	25 00	21 00	21 50	26 60	19.00	21.38
August.....	27 80	29 25	25 00	24 13	24 62	21 00	22 12	26 00	20.25	23 13
September.....	28 00	29 37	25 00	25 00	24 40	20 75	23 62	24 87	21.00	24.10
October.....	28 00	28 20	25 00	26 25	23.75	20 00	26 00	23 30	20.00	24.63
November.....	28 88	28 00	25 00	27 13	23.30	19 50	27 00	21 00	19.25	26 50
December.....	29 50	28 00	25 00	27 50	23 00	19 25	27 00	20 00	19 00	30.60

* As compiled and published by "The Iron Age," New York.

¹ Compiled from the annual records of wholesale prices published by the Department of Labour.

Imports and Exports of Steel Billets.—The Dominion Iron and Steel Co., has, during the past two years, been making some export of steel billets for European demand, but as yet the Department of Customs has not published any separate record thereof.

There has been a considerable annual importation, as shown in the accompanying table of iron and steel billets and of iron and steel ingots, blooms, slabs, puddled bars, etc., the total of such imports during 1915 was 54,118 tons, valued at \$1,270,687, or an average of \$23.48 per ton, as against 13,049 tons valued at \$259,703, or an average of \$19.90 per ton in 1914.

The imports, according to the classification of the Customs Department, include iron or steel billets, weighing not less than 60 lbs. per lineal yard; 32,210 tons valued at \$715,493, or \$22.21 per ton in 1915, as against 12,247 tons valued at \$241,234, or \$19.70 per ton in 1914; steel billets, n.o.p. 10,928 tons, valued at \$238.38, or \$21.81 per ton in 1915, as against 647 tons valued at \$15,121, or \$23.37 per ton in 1914; iron or steel ingots, clogged ingots, blooms, slabs, puddled bars and loops, or other forms n.o.p. less finished than iron or steel bars, but more advanced than pig-iron except castings, 10,980 tons, valued at \$316,814 or \$28.85 per ton in 1915, as against 155 tons valued at \$3,348, or \$21.65 per ton in 1914.

The record of imports since 1908 shows that the principal imports have been in the form of billets weighing not less than 60 pounds per lineal yard. The largest import was in 1912 with a total of 89,189 tons, while the average imports during the past twenty years have been about 22,000 tons.

Imports of Iron and Steel Ingots, Blooms, Billets, etc.

Fiscal Year.	Iron and steel billets weighing not less than 60 pounds per lineal yard.			Iron or steel ingots, cogged ingots, blooms, slabs, puddled bars and loops, or other forms, n.o.p., less finished than iron or steel bars, but more advanced than pig-iron, except castings.			Steel billets, n.o.p.			Total.	
	Short tons.	Value.	Per ton.	Short tons.	Value.	Per ton.	Short tons.	Value.	Per ton.	Short tons.	Value.
1908.....	14,866	\$ 416,163	\$27.99	4,722	\$135,177	\$28.63	1,634	\$48,672	\$29.79	21,222	\$600,012
1909.....	3,940	95,350	24.20	3,712	83,135	22.40	1,932	31,866	16.49	25,860	190,554
1910.....	28,358	518,102	18.27	5,775	97,333	16.85	2,682	61,089	22.78	38,895	489,524
1911.....	44,457	861,036	19.37	3,228	68,616	21.26	711	19,940	28.05	48,396	949,572
1912.....	85,852	1,593,665	18.56	2,608	52,063	19.97	729	17,242	23.65	89,189	1,662,970
Calendar Year											
1913.....	51,765	1,178,151	22.76	655	19,379	29.61	453	14,784	32.67	52,873	1,212,314
1914.....	12,247	241,234	19.70	155	3,348	21.65	647	15,121	23.37	13,049	257,703
1915.....	32,210	715,493	22.21	10,980	316,814	28.85	10,928	238,380	21.81	54,118	1,277,687

Rolling Mill Production.—Statistics of the production in rolling mills have been received from all firms operating both steel furnaces and rolling mills, as well as from a majority of other firms operating rolling mills, and the production in 1915 is reported of steel rails 232,411 tons; wire rods 124,381 tons; plates, sheets and bars, etc., 264,595 tons; angle splice bars, forgings, and other products 34,358 tons. The production in 1914 included: steel rails 428,226 tons; wire rods 63,856 tons; plates, sheets, bars, etc., 143,754 tons, and other products 42,070 tons.

The annual production of rolling mills so far as returns have been furnished to this Department are as follows:—

Annual Production of Rolling Mills.

(IN SHORT TONS.)

Year.	Steel rails.	Wire rods.	Plates, sheets, and bars.	Other products.
1908.....	300,935	41,420		
1909.....	377,642	81,762		
1910.....	399,762	88,456	128,940	28,354
1911.....	399,760	85,811	202,023	62,676
1912.....	471,422	68,174	267,797	36,441
1913.....	554,481	57,389	269,096	51,654
1914.....	428,226	63,856	143,754	42,070
1915.....	232,411	124,381	264,595	34,358

The record of production of finished rolled iron and steel in Canada collected and published by the American Iron and Steel Institute, and the American Iron and Steel Association, which covers a longer period of time and is possibly more complete than that given above, is shown in the following tables quoted from the Annual Statistical Report of the American Iron and Steel Institute for 1914 and special Statistical Bulletin, No. 4, 1916.

Finished Rolled Iron and Steel.

PRODUCTION OF FINISHED ROLLED PRODUCTS, 1895-1909.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1895.....	66,402	1900.....	100,690	1905.....	385,826
1896.....	75,043	1901.....	112,007	1906.....	571,742
1897.....	77,021	1902.....	161,485	1907.....	600,179
1898.....	90,303	1903.....	129,516	1908.....	496,517
1899.....	110,642	1904.....	180,038	1909.....	662,741

PRODUCTION OF FINISHED ROLLED FORMS BY LEADING PRODUCTS

Products.	1910.	1911.	1912.	1913.	1914.	1915
Rails.....	366,465	360,547	423,885	506,709	382,344	209,752
Structural shapes, and wire rods.....	80,993	76,617	64,082	68,048	59,050	114,829
Plates and sheets, nail plate, merchant bars, tie-plate bars, etc.....	292,353	344,760	373,257	392,340	218,125	328,737
Total, Gross tons.....	739,811	781,924	861,224	967,097	659,519	653,318

PRODUCTION OF FINISHED ROLLED FORMS, SHOWING IRON AND STEEL SEPARATELY, GROSS TONS, 1904-1914.

Years.	Iron.	Steel.	Total.	Years.	Iron.	Steel.	Total.
1904.....	53,188	126,850	180,038	1910....	83,918	655,893	739,811
1905.....	67,421	318,405	385,826	1911....	86,383	695,541	781,924
1906.....	78,898	492,844	571,742	1912....	109,012	752,212	861,224
1907.....	81,093	519,086	600,179	1913....	95,881	871,216	967,097
1908.....	65,505	431,012	496,517	1914....	47,309	612,210	659,519
1909.....	79,636	583,105	662,741	1915....	40,797	612,521	653,318

PRODUCTION OF STEEL RAILS, 1895-1914.

Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.	Years.	Gross tons.
1895.....	600	1900.....	700	1905....	178,885	1910....	366,465
1896.....	600	1901.....	891	1906....	312,877	1911....	360,547
1897.....	500	1902.....	33,950	1907....	311,461	1912....	423,885
1898.....	600	1903.....	1,243	1908....	268,692	1913....	506,709
1899.....	*835	1904.....	36,216	1909....	344,830	1914....	382,344
						1915....	209,752

* Includes a few tons of iron rails.

Steel Rails -The annual production of steel rails in Canada, has, since 1905, varied between 200,000 tons and 500,000 tons per annum, the greater part of which has been for home consumption, although during the past two years there has been some export, the quantity not separately recorded. The "Iron Trade Review,"¹ however, estimated the sales of Canadian steel rails in the United States during 1915 at about 58,500 tons.

The annual imports of steel rails as shown in the following table from 1895 to 1905 ranged between 50,000 and 212,000 tons, averaging about 125,000 tons. From 1906 to date, however, or since the establishment of rail mills at Sydney and Sault Ste. Marie the imports have fallen to an annual average of 60,000 tons, the variation being between a minimum of 10,420 tons in 1915 and a maximum of 177,041 tons in 1913.

¹ Iron Trade Review, March 18, 1915, p. 580.

Wire Rods.—The production of wire rods in Canadian rolling mills reached a maximum in 1915 amounting to 124,381 tons and was double the production of the previous year. From 1908 to 1914 inclusive, the average annual production was about 70,000 tons. The imports of wire rods in the coil in 1915 were 71,839 tons valued at \$1,695,842, or \$23.60 per ton, as compared with imports in 1914 of 65,250 tons valued at \$1,472,597 or \$22.57 per ton and imports in 1913 of 79,608 tons valued at \$1,962,235, or \$24.65 per ton. The annual imports have varied between rather wide limits, as shown by the following table, the highest figure having been reached during the fiscal year of 1913, with a total of 91,919 tons.

The monthly price of wire rods in Pittsburgh in 1915 advanced from \$25 per gross ton during the first six months of the year to a maximum of \$39.50 in December.

Annual Imports of Wire Rods.

Fiscal Year.	Short tons	Value.	Value per ton.	Fiscal Year.	Short tons.	Value.	Value per ton.
1898.....	33,589	\$658,153	\$19.59	1908.....	9,862	\$295,122	\$29.93
1899.....	34,800	765,777	22.01	1909.....	20,312	538,378	26.51
1900.....	41,994	1,196,593	28.49	1910.....	28,071	749,117	26.69
1901.....	20,505	645,136	31.46	1911.....	36,032	965,912	26.81
1902.....	55,182	1,522,792	27.60	1912.....	43,397	1,033,397	23.81
1903.....	50,624	1,415,447	27.96	1913.....	91,919	2,144,405	23.33
1904.....	42,313	1,134,149	26.80	Calendar Year			
1905.....	31,730	792,078	24.96	1913.....	79,608	1,962,235	24.65
1906.....	18,811	478,991	25.46	1914.....	65,250	1,472,597	22.57
1907.....	11,050	306,039	27.70	1915.....	71,839	1,695,842	23.60

Average Monthly Prices of Bessemer Wire Rods at Pittsburgh.*

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
January....	\$33.75	\$37.00	\$34.30	\$33.00	\$33.00	\$28.00	\$24.37½	\$30.00	\$25.50	\$25.00
February....	34.00	37.00	35.00	33.00	33.00	28.75	25.00	30.00	26.38	25.00
March.....	34.00	37.00	35.00	33.00	33.00	29.00	25.00	30.00	26.50	25.00
April.....	34.12½	37.00	35.00	29.00	32.50	29.00	25.00	30.00	26.00	25.00
May.....	34.40	37.00	35.00	27.50	32.00	29.00	25.00	30.00	25.50	25.00
June.....	34.00	37.12½	33.50	27.50	30.80	28.25	25.00	29.50	24.50	25.00
July.....	34.00	36.50	33.00	29.40	29.25	27.00	25.00	28.30	24.50	25.63
August.....	34.00	36.10	33.25	31.00	28.25	27.00	25.80	28.00	25.00	27.00
September..	34.00	36.00	33.00	31.50	28.00	27.00	27.00	27.37½	26.20	29.40
October.....	34.50	35.40	33.00	31.87½	28.50	26.00	28.50	26.60	25.88	31.75
November..	35.50	34.00	33.00	32.50	28.12½	25.30	29.75	25.87½	25.25	36.25
December..	37.00	34.00	33.00	33.00	28.00	24.50	30.00	25.17	25.00	39.50

* As compiled and published by "The Iron Age," New York.

Tin Plate.—There is no production of tin plate in Canada. The imports during 1915 were 45,165 tons, valued at \$2,883,951, as compared with imports in 1914 of 50,791 tons, valued at \$3,151,385. The imports during the past ten years have averaged about 42,200 tons per annum.

Annual Imports of Tin Plate.

Year.	Tons.	Value.	Year.	Tons.	Value.
Fiscal Year.			Fiscal Year.		
1891.....	10,734	854,770	1904.....	24,820	1,461,811
1892.....	19,296	1,235,961	1905.....	30,000	1,751,507
1893.....	15,131	892,106	1906.....	30,259	1,869,000
1894.....	15,369	956,813	1907.....	22,628	1,516,777
1895.....	13,022	681,739	1908.....	34,876	2,437,540
1896.....	16,910	923,279	1909.....	26,859	1,682,366
1897.....	18,768	919,596	Calendar Year.		
1898.....	22,864	1,150,741	1909.....	36,904	2,216,089
1899.....	16,575	927,036	1910.....	39,101	2,475,010
1900.....	25,108	1,683,788	1911.....	47,006	3,172,943
1901.....	27,165	1,466,965	1912.....	60,502	3,826,735
1902.....	27,207	1,528,655	1913.....	58,031	3,954,615
1903.....	30,251	1,806,643	1914.....	50,791	3,151,385
			1915.....	45,165	2,883,951

EXPORTS AND IMPORTS OF IRON AND STEEL GOODS

The exports of iron and steel from Canada consist chiefly of manufactured goods such as agricultural implements, automobiles, bicycles, machinery, etc. Compared with the value of imports, the total value of exports previous to 1915 has been small, amounting to not more than 10 per cent of the former.

During 1915, however, not only has there been a large export of steel in munitions, but an important export business in iron and steel goods has been undertaken.

The Algoma Steel Corporation sold a considerable tonnage of steel rails in the United States while export orders for Great Britain and France, in billets, rods and wire products, made up a large part of the business of the Dominion Iron & Steel Co.

The total recorded value of iron and steel exported during the calendar year 1915, was \$48,268,148 as compared with a value of exports in 1914 of \$14,391,746, and in 1913 of \$13,999,149.

The exports during 1915 included pig-iron and ferro-alloys, 26,545 tons valued at \$768,632; scrap iron and steel 89,358, valued at \$883,134; wire and wire nails 71,998 tons, valued at \$3,224,740; agricultural implements, valued at \$3,417,060; automobiles and bicycles \$7,139,712; other manufactures of iron and steel \$32,834,870.

The exports during 1914 included: pig-iron and ferro-alloys 19,063 tons, valued at \$486,366; scrap iron and steel 35,405 tons, valued at \$446,337; wire and wire nails 9,663 tons, valued at \$355,781; agricultural implements, valued at \$5,782,899; automobiles and bicycles \$3,409,749; other manufactures of iron and steel \$3,904,614.

The exports during 1913 in similar groupings were: pig-iron and ferro-alloys 6,326 tons, valued at \$351,646; scrap iron and steel 45,556 tons, valued at \$483,813; agricultural implements valued at \$7,411,246; auto-

mobiles and bicycles \$3,630,964; other manufactures of iron and steel \$2,121,480.

A detailed record of these exports during the past two years is shown in the accompanying table:—

Exports of Iron and Steel Goods, the Product of Canada, During the Calendar Years 1914 and 1915.

		1914.			1915.		
		Quantity.	Value.	Average value.	Quantity.	Value.	Average value.
Stoves.....	No.	4,198	\$ 25,149	\$ 5.99	1,271	\$ 18,563	\$ 14.61
Gas buoys and parts of.....	\$		21,009			2,017	
Castings, n.e.s.....			24,218			143,714	
Pig-iron.....	Tons	14,198	201,145	14.17	17,307	231,551	13.38
Ferro-silicon and ferro-compounds.....	\$	4,865	285,221	57.45	9,238	537,081	58.14
Wire and wire-nails.....	\$	9,663	355,781	36.82	71,998	3,224,740	44.79
Machinery (linotype machines).....	\$		5,562			6,946	
Machinery, n.e.s.....			344,689			536,162	
Sewing machines.....	No.	2,109	31,392	14.88	2,557	30,479	11.92
Washing machines, etc.....	\$		33,986			20,334	
Typewriters.....	No.	3,055	200,441	65.61	3,175	206,811	65.14
Scrap iron and steel.....	Tons	35,405	446,337	12.60	89,358	883,134	9.88
Hardware, tools, etc.....	\$		95,497			321,021	
Hardware, n.e.s.....			190,763			401,053	
All other iron and steel.....			2,931,908			31,147,770	
Agricultural implements—							
Mowing machines.....	No.	21,457	725,831	33.83	5,031	175,912	34.97
Reapers.....	"	3,919	223,228	56.96	471	21,105	44.80
Drills.....	"	3,961	259,701	65.56	6,400	422,772	66.06
Harvesters.....	"	19,474	2,015,996	103.52	7,668	809,141	105.52
Ploughs.....	"	12,896	324,349	25.15	14,923	309,286	20.73
Harrows.....	"	6,252	92,556	14.80	4,459	81,731	18.33
Hay rakes.....	"	6,524	196,519	30.12	1,758	40,289	22.92
Seeders.....	"	32	1,810	56.56	2	87	43.50
Threshing machines.....	"	1,965	799,307	406.77	1,001	568,401	567.83
Cultivators.....	"	6,030	146,668	24.32	5,957	166,602	27.97
All other.....	"		290,520			302,355	
Automobiles.....	No.	5,621	3,011,327	535.73	13,475	6,756,395	501.40
parts of.....	\$		384,428			363,178	
Bicycles.....	No.	111	10,971	90.28	116	4,692	40.45
parts of.....	\$		3,973			15,447	
Total.....			14,391,746			43,268,148	

Annual Exports of Iron and Steel Products since 1884.

Year.	Value. *	Year.	Value.	Year.	Value.
1884.....	\$186,854	1895.....	\$174,778	1906.....	\$1,552,963
1885.....	115,158	1896.....	284,296	1907.....	1,607,368
1886.....	228,027	1897.....	592,849	1908.....	2,098,138
1887.....	251,221	1898.....	593,060	1909*.....	7,172,413
1888.....	184,214	1899.....	975,377	1910.....	7,895,489
1889.....	144,909	1900.....	1,570,013	1911.....	9,907,281
1890.....	133,724	1901.....	1,837,179	1912.....	10,682,484
1891.....	152,919	1902.....	2,751,324	1913.....	13,999,149
1892.....	155,597	1903.....	3,058,320	1914.....	14,391,746
1893.....	214,636	1904.....	1,318,482	1915.....	43,268,148
1894.....	167,183	1905.....	1,287,558		

* Agricultural implements, automobiles, and bicycles included in 1909 and subsequent years.

A record of the annual exports of pig-iron and ferro-alloys has already been given on page 17. The annual exports of scrap iron and steel are shown herewith.

The total value of the imports of iron and steel goods during the calendar year 1915 was \$74,308,983, as compared with a value of \$80,063,679 imported during the calendar year 1914, and \$145,226,972 imported during 1913. Previous to 1913 the record is shown covering the fiscal periods. During the twelve months ending March, 1913, the imports were valued at \$148,579,272, as against imports valued at \$105,614,450 during the twelve months ending March, 1912.

Between 1895 and 1904, the imports of iron and steel increased from about \$8,600,000 to over \$40,000,000. During the next five years there was comparatively little change, but from 1909 to 1913 the increase was again very rapid. During the latter part of 1913 there was, however, a distinct check to imports with the heavy falling off shown in 1914 and 1915. A detailed statement of the imports of iron and steel during the calendar years 1915 and 1914 is shown in the general tables of imports of iron and steel goods following.

The imports during 1915, subject to duty, were valued at \$62,842,171, the imports free of duty during the same period being valued at \$11,466,812. The imports during 1914 subject to duty were valued at \$64,901,486, and the imports free of duty during the same period were valued at \$15,162,193. These imports include all classes of iron and steel goods manufactured as well as those of the cruder form. In many cases the values only of the imported goods are given, so that a total tonnage of imports cannot be stated. In the case of most of the cruder materials, however, the quantities are given, and a compilation of these showing the importation of the cruder forms of iron and steel since 1909 is shown in the accompanying tables.

Thus during the twelve months ending December, 1915, there were imported 771,007 tons of iron and steel valued at \$27,504,685, or an average value per ton of \$35.67, together with other iron and steel goods of which the quantities are not stated, valued at \$46,804,298.

During the twelve months ending December, 1914, there were imported 882,636 tons of iron and steel valued at \$28,523,956, or an average value per ton of \$32.32, together with other iron and steel goods of which the quantities are not stated, valued at \$51,238,306.

During the twelve months ending December, 1913, there were imported 1,890,506 tons of iron and steel goods, valued at \$59,882,222, or an average value per ton of \$31.67, together with other iron and steel goods of which the quantities are not stated, valued at \$85,344,750.

The 1915 imports show an increase in the case of ingots and billets, bars, rods and bands, and forgings, etc., but all other groupings show a falling off in imports.

Summary of Imports of Iron and Steel,* 1915.

Material.	Tons.	Value.	Average.
Pig-iron.....	47,482	\$624,200	\$13.15
Ferro-products and chrome steel.....	13,905	820,976	59.65
Ingots, blooms, billets, puddled bars, etc.....	34,118	1,270,687	23.48
Scrap iron and scrap steel.....	11,477	127,614	11.12
Plates and sheets.....	224,484	7,647,560	34.07
Tin plates and sheets.....	43,165	2,883,931	63.85
Bars, rods, hoops, bands, etc.....	156,990	5,829,088	37.13
Structural iron and steel.....	126,780	3,615,333	28.52
Rails and connexions.....	12,481	379,218	30.38
Pipe and fittings (a).....	4,489	110,978	24.72
Nails and spikes.....	1,522	86,876	37.08
Wire (a).....	49,529	2,175,834	43.93
Forgings, castings, and manufactures.....	22,585	1,932,370	85.96
Total.....	771,007	27,504,685	35.67
Other iron and steel products valued at.....		46,804,298	
Total value of imports of iron and steel.....		74,308,983	

* For details of these items see general tables following.

(a) There are additional imports of pipe and wire included under "other iron and steel products."

Summary of Imports of Iron and Steel, 1914.

Material.	Tons.	Value.	Average.
Pig-iron.....	72,680	\$982,189	\$12.48
Ferro-products and chrome steel.....	22,271	560,686	25.18
Ingots, blooms, billets, puddled bars, etc.....	13,049	259,703	19.90
Scrap iron and scrap steel.....	27,688	337,406	12.19
Plates and sheets.....	227,633	7,877,729	34.61
Tin plates and sheets.....	50,791	3,151,385	62.05
Bars, rods, hoops, bands, etc.....	148,368	5,138,193	34.63
Structural iron and steel.....	160,538	4,214,520	26.25
Rails and connexions.....	42,064	1,115,773	26.53
Pipe and fittings (a).....	15,614	393,466	25.33
Nails and spikes.....	4,864	210,098	43.20
Wire (a).....	66,280	3,205,635	48.37
Forgings, castings, and manufactures.....	20,339	1,375,590	67.63
Total.....	878,179	28,825,373	32.82
Other iron and steel products valued at.....		51,238,306	
Total value of imports of iron and steel.....		80,063,679	

* For details of these items see general tables following.

(a) There are additional imports of pipe and wire included under "other iron and steel products."

Summary of Imports of Iron and Steel,* 1913.

Material.	Tons.	Value.	Average.
Pig-iron.....	236,769	\$ 3,247,405	811.72
Ferro-products and chrome steel.....	30,678	970,100	31.62
Ingots, blooms, billets, puddled bars, etc.....	52,872	1,212,314	22.93
Scrap iron and scrap steel.....	104,747	1,488,255	14.21
Plates and sheets.....	365,675	13,963,865	38.19
Tin plates and sheets.....	58,031	3,954,615	68.14
Bars, rods, hoops, bands, etc.....	277,879	10,193,280	36.69
Structural iron and steel.....	439,871	12,739,954	28.96
Rails and connexions.....	182,421	5,120,830	28.07
Pipe and fittings (a).....	30,663	847,922	27.65
Nails and spikes.....	7,584	360,489	47.53
Wire (a).....	70,712	3,688,660	52.16
Forgings, castings, and manufactures.....	32,604	2,090,533	64.12
Total.....	1,890,506	59,882,222	31.67
Other iron and steel products valued at.....		85,344,750	
Total value of imports of iron and steel.....		145,226,972	

* For details of these items see general tables following.

(a) There are additional imports of pipe and wire included under "other iron and steel products."

Summary of Tonnage of Iron and Steel Imported 1909-1913. (IN SHORT TONS.)

Material.	TWELVE MONTHS ENDING MARCH.				
	1909.	1910.	1911.	1912.	1913.
Pig-iron.....	58,591	159,506	270,102	201,112	291,904
Ferro-products and chrome steel.....	13,206	15,153	19,182	18,548	23,378
Ingots, blooms, billets, puddled bars, etc.....	8,887	36,810	48,395	89,190	86,745
Scrap iron and scrap steel.....	26,212	28,797	53,824	78,378	103,317
Plates and sheets.....	116,610	200,575	205,690	243,461	376,633
Tin plates and sheets.....	26,859	39,866	44,025	45,802	64,571
Bars, rods, hoops, bands, etc.....	73,261	117,159	183,865	195,139	278,878
Structural iron and steel.....	162,735	195,748	232,585	268,572	377,551
Rails and connexions.....	32,543	55,183	36,690	97,062	156,318
Pipe and fittings.....	18,309	16,705	28,831	26,627	40,987
Nails and spikes.....	1,611	3,476	3,374	7,201	11,420
Wire.....	39,375	68,211	64,850	60,597	80,846
Forgings, castings, and manufactures.....	14,394	18,093	24,523	27,668	47,195
Total.....	592,593	955,291	1,215,936	1,368,357	1,939,743

Annual Imports of Iron and Steel Products since 1895.

Year.	Value.	Year.	Value.
1895(a).....	\$ 8,684,024	1906(a).....	\$42,210,305
1896.....	10,206,759	1907.....	44,739,403
1897.....	11,063,156	1908(b).....	64,257,238
1898.....	16,340,992	1909.....	42,075,797
1899.....	19,463,329	1910.....	62,356,974
1900.....	27,926,766	1911.....	88,179,152
1901.....	25,023,453	1912.....	105,614,450
1902.....	31,591,488	1913(b).....	148,579,272
1903.....	39,536,867	1913(c).....	145,226,972
1904.....	40,449,175	1914.....	80,063,679
1905.....	40,820,233	1915(c).....	74,308,983

* Nine months ending March, 1907.

(a) Twelve months ending June from 1895 to 1906 inclusive.

(b) Twelve months ending March from 1908 to 1913 inclusive.

(c) Twelve months ending December from 1913 to date.

Imports of Iron and Steel Goods Subject to Duty, 1914 and 1915.

Material.	CALENDAR YEAR 1914.		CALENDAR YEAR 1915.	
	Quantity.	Value.	Quantity.	Value.
Agricultural implements, n.o.p., viz.—				
Binding attachments.....		\$ 3,548		\$ 5,728
Cultivators and weedeaters and parts of.....		48,246		43,009
Drills, seed.....	3,928	58,886	4,013	47,505
Farm, road, or field rollers.....	443	122,429	242	19,639
Forks, pronged.....	9,163	5,718	6,978	3,383
Harrows and parts of.....		79,107		53,354
Hay tedders.....	1,676	181,210	3,041	330,602
Hoe.....	219	10,966	108	4,507
Hoe.....	15	607	40	1,302
Horse rakes.....	9,950	2,775	48	1,302
Knives, bay or straw.....	4,710	11,754	3,894	1,131
Knives edging.....	4,835	2,061	2,530	1,749
Lawn mowers.....	1,138	59,424	834	87
Manure spreaders.....	14,258	66,309	10,230	41,149
Mowing machines.....	1,037	46,042	71,433	3,722
Ploughs and parts of.....	1,260	501,704	2,189	71,433
Post hole diggers.....		4,495		33,099
Potato diggers.....	4,691	44,036	2,862	2,538
Rakes, n.o.p.....	1,435	5,146	19,383	35,71
Reapers.....	26,552	30,434	9,878	2,473
Scythes.....	3,029	14,805	155	53,99
Sickles or reaping hooks.....	289	631	2,884	5,16
Snaths.....	10	17	390	1,66
Spades and shovels of iron or steel, n.o.p.....	4,694	19,438	241	1,037
Spade and shovel blanks, and iron or steel cut to shape for the same.....	1,549	2,883	3,038	8,315
Parts of agricultural implements paying 12½, 17½ and 17½ per cent.*.....		191,070		1,935
Parts of agricultural implements paying 12½, 17½, and 20 per cent. n.o.p.....		204,874		90,310
All other agricultural implements, n.o.p.....		81,867		108,982
Anvils and vices.....		54,163		71,776
Cart or wagon axles or boxes.....	190-5	29,714	108-73	44,559
Axe and adze parts, n.o.p., and axle blanks and parts thereof, of iron or steel for railway, tramway, or other vehicles.....		65,206	51-4	5,787
Bar iron or steel, rolled whether in coils, bundles, rod or bars, comprising rounds, ovals, squares and flats, n.o.p.....		221,513		166,135
Butts and hinges, n.o.p.....		1,442,734		751,344
	49,693-8	92,375	57,813	1,858,487
				55,071
				32,15

* 12½, 12½, and 12½ per cent from April, 1915.

Canada plates, Russia iron, terne plate, and rolled sheets of iron or steel coated with zinc spelter or other metal, of all widths or thicknesses, n.o.p.	Tons	8,369.0	\$435,622	\$52 05	9,363.3	\$487,797	\$52 10
Castings, iron or steel, n.o.p.	\$		\$81,523			\$94,956	
Castings, malleable iron, imported by manufacturers of mowers, binders, harvesters and reapers for use exclusively in their own factories	Tons	15,611.1	71,812	28.33	4,489	121,232	24.72
Cast-iron pipe, of every description	Tons	10,562	118,290	11.64	5,136	130,978	16.47
Chains, coil chain, chain links, and chain shackles of iron or steel of 5-16 in. diameter, and over	Tons	1,012.6	82,957	81.92			
Chain, coil chain, chain links, including repair links and shackles, of iron or steel, 1 1/2 of an inch, in diameter and over	Tons	698.5	55,321	79.29	143.81	31,191	90.72
Chains, coil chains and links, including repair links and shackles, of iron or steel, n.o.p.	Tons	14.0	95,421	131.28	24	71,079	75.74
Tacks, shoe	Tons	321.4	38,401	117.14	151.21	48,828	111.04
Nails, brads, spikes, and tacks of all kinds, n.o.p.	Tons	89	162,315	2,925.22	46	24,995	164.65
Engines, etc.—	No.						
Locomotives for railways	No.	23	76,444	2,085.52	78	145,022	3,217.87
Motor cars for railways and tramways	No.	28	47,067	3,770.40	11	80,319	
Engines, fire	No.	15,492	1,959,637	127.31	20,081	42,451	544.24
Engines, gasoline and gas	No.	356	248,820	694.93	124	55,785	4,291.15
Engines, steam	No.		236,691			2,786,590	132.81
Rollers, steam and parts of	No.		278,262			142,533	1,149.46
Fire extinguishing machines, including sprinklers for fire protection	No.		103,316			117,657	
Fittings, iron or steel, for use exclusively in the manufacture of	Tons		780,884			94,732	
Flat plates, of iron or steel, not punched or drilled, for use exclusively in the manufacture of	Tons	3,035	206,456	68.02	4,070	267,444	65.79
Flat plates, of iron or steel, punched or drilled, for use exclusively in the manufacture of	Tons	5,741	152,245	26.52	121	3,225	26.08
Ferro-silicon, spiegeleisen, and ferro-manganese	Tons	1	88	88.00	840	163	81.39
Ferro-silicon, containing not more than 15 per cent silicon	Tons					35,214	41.92
Ferro-silicon, containing not more than 15 per cent silicon	Tons					44,972	288.28
Spiegeleisen and ferro-manganese containing not more than 15 per cent manganese and other ferro-alloys, n.o.p.	Tons	2,375	68,445	28.82	156		
Forgings of iron or steel of whatever size or shape, or in whatever stage of manufacture, n.o.p., and steel shafting turned, compressed or polished, and hammered, drawn or cold rolled iron or steel bars or shapes, n.o.p.	Tons	1,568.6	174,742	111.40	6,697.4	814,083	121.55
Hardware, viz., builders', cabinet makers', upholsterers', harness-makers', saddlers', and carriage hardware, including curry-combs, n.o.p.	Tons		637,068			524,876	
Horse, mule, and ox shoes	Tons		24,563			24,318	
Iron or steel billets, weighing not less than 60 pounds per lineal yard	Tons	12,247	211,234	19.71	32,240.0	715,493	22.21
Iron or steel ingots, coiled ingots, blooms, slabs, puddled bars and loops, or other forms, n.o.p., less finished than iron or steel bars, but more advanced than pig-iron except castings	Tons	154.6	3,348	21.65	10,979.0	316,814	26.85
Iron or steel bridges or parts thereof, iron or steel structural work, columns, shafts or sections, drilled, punched, or in any further stage of manufacture, than as rolled or cast, n.o.p.	Tons						
Iron in pig	Tons	28,594	515,223	12.38	47,432	49,264	13.15
Iron in pig charcoal	Tons	86	981,107	1.58		624,200	
Locks of all kinds	Tons		1,082	1.58			
	Tons		254,609			181,597	

(a) Three months, January, February, March.

(b) Nine months, April to December inclusive.

Imports of Iron and Steel Goods Subject to Duty—Continued.

CALENDAR YEAR, 1914.				CALENDAR YEAR, 1915.			
Material.	No.	Quantity.	Value.	Value per unit.	Quantity.	Value.	Value per unit.
Machines, machinery, etc.—							
Automobiles and motor vehicles of all kinds.	No.	5,599	5,296,831	946.03	6,210	4,223,233	680.07
Automobiles and motor vehicles, parts of.	No.		2,785,634			3,696,267	
Cranes and derricks.	No.	145	448,176	3,090.87	90	232,566	2,543.42
Dental engines electric.	No.	71	4,000	56.34	99	5,571	56.34
Fanning mills.	No.	203	18,594	23.11	223	14,718	19.04
Grain crushers.	No.	366	18,594	14.61	193	6,579	34.09
Hay presses.	No.	188	31,319	166.55	143	26,443	257.64
Windmills and complete parts thereof.	No.		50,596			38,845	
Ore crushers and rock crushers, stamp mills, cornish and belted rolls, rock drills, air compressors, and percussion coal cutters.	No.		499,531			300,544	
Portable machines:—							
Fodder or feed cutters.	No.	645	10,506	15.80	947	33,666	35.36
Horse powers for farm purposes.	No.	1	93	31.00	1	23	23.00
Portable engines with boilers in combination and traction engines for farm purposes.	No.						
Portable sawmills and planing mills.	No.	532	854,364	1,605.95	497	829,756	1,752.02
Steam shovels and electric shovels.	No.	12	3,261	271.75	10	4,270	427.00
Thrashing machine separators.	No.	29	215,356	7,416.07	26	99,681	3,834.26
Thrashing machine separators, parts of, including wind-stackers, baggers, weighers, and self-feeders for same, and finished parts thereof for repairs, when imported separately.	No.	617	3,08,283	507.88	683	616,758	626.92
All other portable machines, n.o.p., and parts of.	No.		221,090			279,225	
Concrete mixing machines.	No.	159	119,756			16,763	
Sewing machines.	No.	15,667	66,121	423.85	79	31,369	397.08
Adding machines.	No.	1,479	23,434	15.85	14,814	329,582	22.18
Machines, specially designed for ruling, folding, binding, embossing, creasing, or cutting paper or cardboard, when for use exclusively by printers, bookbinders, and by manufacturers of articles made from paper or cardboard, including parts thereof, composed wholly or in part of iron, steel, brass, or wood.	No.	9,051	514,831	56.88	5,622	134,613	23.93
Machinery of a class or kind not made in Canada and parts thereof adapted for carding, spinning, weaving, braiding, or knitting fibrous material, when imported by manufacturers for such purposes.	No.		140,699			297,123	52.85
Printing presses and lithographic presses.	No.		231,832			136,999	
Type-making accessories for printing presses.	No.		378,907			224,551	
Press making machinery.	No.		16,574			24,814	
Coal handling machinery.	No.		49,097			20,053	
Roller and mill machinery.	No.		190,570			36,754	
Roller mill machinery.	No.		414,396			443,050	
Sawmill machinery.	No.		147,219			150,841	
Machinery of a class or kind not made in Canada and parts thereof adapted for carding, spinning, weaving, braiding, or knitting fibrous material, when imported by manufacturers for such purposes.	No.		140,699			137,086	
			581,918			843,040	

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Imports of Iron and Steel Goods Subject to Duty.—Continued.

Material.	CALENDAR YEAR, 1914.			CALENDAR YEAR, 1915.		
	Quantity.	Value.	Value per unit.	Quantity.	Value.	Value per unit.
Steel billets, n.o.p.	617.2	\$ 15,121	\$ 23.37	10,928.4	\$138,380	\$ 21.81
Stoves, of all kinds, for coal, wood, oil, spirits or gas.		563,371			253,194	
Stove urns of metal, and dovetails, chaplet and hinge tubes of tin for use in the manufacture of stoves.		11,948			9,801	
Switches, frogs, crossings, and intersections for railways.		148,848			39,417	
Tubing—						
Wrought or seamless tubing, plain or galvanized, threaded and coupled or not, over 10 in. in diameter, n.o.p.		185,311			112,692	
Wrought or seamless tubing, iron or steel, plain or galvanized, threaded and coupled, or not, over 4 in. but not exceeding 10 in. in diameter, n.o.p.		201,408			74,893	
Wrought or seamless tubing, iron or steel, plain or galvanized, threaded and coupled, or not, 4 in. or less in diameter, n.o.p.		164,147			109,536	
Seamless steel tubing, valued at not less than 3½ cents per lb.	211.8	30,314	143.13	383.0	56,347	147.12
Rolled or drawn square tubing of iron or steel, adapted for use in the manufacture of agricultural implements.		6,056			94	
Iron or steel pipe, plain or galvanized, riveted, corrugated or otherwise specially adapted for use in the manufacture of agricultural implements.		469,598			181,607	
Iron or steel pipe, not built or laid, welded, or otherwise adapted for use in the manufacture of agricultural implements.		1,211			597	
Wire, of internal diameter when for use exclusively in alluvial gold mining.		241,813			117,215	
Ware—Azule, granite, or enamelled iron or steel ware.		161,413			150,083	
Ware—Iron or steel hollow ware, plain black or coated, n.o.p., and nickel and aluminium kitchen or household hollow ware n.o.p.		8,436			5,401	
Wire bale tie.		1,624			38	
Wire bound wooden pipe, n.o.p.	2,236.9	243,885	109.02		201,055	
Wire cloth or woven wire and netting of iron and steel.	110.0	34,390	312.64	136.7	47,619	348.35
Wire, crucible cast steel, valued at not less than 6 cents per lb.		39,587			17,182	
Wire buckhorn strip fencing, woven wire fencing, and wire fencing, of iron and steel, n.o.p., not to include fencing or wire larger than No. 9 gauge.	945.4	74,182	78.47		29,778	
Wire, single or several, covered with cotton, linen, silk, rubber, or other material, including cable so covered.		401,500			176,657	
Wire of iron and steel all kinds, n.o.p.	3,810.5	198,464	52.08	2,647.8	152,674	57.66
Wire rope, stranded or twisted wire clothes lines, picture or other twisted wire, and wire of iron and steel all kinds, n.o.p.	2,670.3	432,099	161.81		272,604	
Iron or steel nuts, n.o.p., or bolts with or without threads, nut, bolt, and hinge blanks, and T and strap hinges of all kinds, n.o.p.	2,147.8	169,929	79.12	1,780.2	156,960	88.17
Iron or steel scrap, wrought, being waste or refuse, including punchings, cuttings, and clippings of iron or steel plates or sheets having been in actual use; crop ends of tin plate bars, blooms, and rails, the same not having been in actual use.	17,446.3	218,553	12.53	5,911.7	71,859	12.16
Penknives, jack-knives, and pocket knives of all kinds.		81,715			94,585	
Knives and forks of steel, plated or not, n.o.p.		210,260			180,145	
All other cutlery, n.o.p.		539,548			318,813	

Guns, rifles, including air guns and air rifles (not being toys), muskets, cannons, pistols, revolvers, or other firearms.	718,211			424,149	
Bayonets, swords, fencing foils, and masks.	8,612			11,331	
Needles of any material or kind, n.o.p.	117,408			146,480	
Steel, chrome steel.	11,201	146-6		13,664	93.21
Steel plate, universal mill or rolled edge plates of steel over 12 in. wide, imported by manufacturers of bridges or of structural work, or for use in car construction.	29,277.8	26.82	24,684.8	849,597	34.42
Steel in bars or sheets to be used exclusively in the manufacture of shovels when imported by the manufacturers of shovels.	653.7	26.13	1,794	47,368	26.40
Roller iron or steel, or cast steel in bars, bands, hoops, scrolls, or strip, sheet, or plate of any size, thickness, or width, galvanized or coated with any material or not, and steel blanks for the manufacture of milling cutters, when of greater value than 3¢	6,172.4	126.32	7,898.8	1,104,073	139.78
Steel bars adapted for use in bearings of machinery and vehicles.	19,747			22,691	
Flat steel, cold rolled, not over 1/4 in. thick, for the manufacture of cups and cones for ball	2.8	61.43	39.7	2,654	66.85
Steel bolts.	4,729			2,468	
Steel wool.					
Tools and implements—					
Axes, cleavers, hatchets, wedges, sledges, hammers, crowbars, cant-dogs, and track tools, picks, mattocks and eyes and poles for the same.	47,608	6.47	1,549	22,995	
Saws.	26,195			8,363	5.46
Files and rasps, n.o.p.	83,110			80,996	
Tools, hand of all kinds, n.o.p.	101,699			97,529	
Knife blades or blanks, and table forks of iron or steel, in the rough, not handied, filed, ground, or otherwise manufactured.	621,039			510,268	
Manufactures, articles or wares of iron or steel, or of which iron and steel (or either) are the component materials of chief value, n.o.p.	87			126	
	7,542,806			5,458,284	
	64,901,486			62,842,171	

Imports of Iron and Steel Goods Free of Duty, 1914 and 1915.

Material.	CALENDAR YEAR, 1914.			CALENDAR YEAR, 1915.		
	Quantity.	Value.	Value per unit.	Quantity.	Value.	Value per unit.
Anchors for vessels.						
Canada plates, Russia iron,terne plates and rolled sheets of iron, or steel coated with zinc, spelter or other metal, of all widths or thicknesses, n.o.p.	425.5	\$30,943	\$72.72	283.0	\$27,669	\$97.77
Chain coll, coil chain links including repair links and chain shackles of iron or steel 1 1/2 in. in diameter and over.	6,430.6	301,417	46.87	2,190.8	115,003	52.49
Chain, malleable sprocket or link belting when imported by manufacturers of agricultural implements for use in the manufacture of such implements in their own factories.	263.1	19,722	75.48	50.3	3,939	78.31
Cream separators, and steel bowls for cream separators.		139,663			89,781	
Cream separators—materials which enter into the construction and form part of when imported by manufacturers of cream separators to be used in the manufacture thereof, and articles of metal for use in the manufacture of cream separator parts.		435,337			208,855	
Ferro-manganese and spiegeleisen containing over 15 per cent manganese.		236,958			216,313	
Gas buoys—The following articles and materials, when imported by manufacturers of automatic gas buoys and automatic gas beacons, for use in the manufacture of such buoys and beacons for the Government of Canada or for export, viz., iron or steel tubes over 16 in. in diameter; flanged and dished steel heads made from boiler plate, over 5 feet in diameter; hardened steel balls, not less than 3 in. in diameter; acetylene gas lanterns and parts thereof, and tobis bronze in bars or rods.	14,030	328,707	23.43	12,640	723,738	57.26
Gun barrels, in single tubes, forged, rough bored.		21,288			10,160	
Iron or steel rods over 1/4 in. in diameter for manufacturing of chain.						
Iron or steel, rolled round wire rods, in the coil, not over 1 in. in diameter, when imported by wire manufacturers for use in making wire in the coil in their own factories.	46.7	1,041	22.29			
Boiler plate of iron or steel not less than 30 in. in width, and not less than 1/4 in. in thickness, for use exclusively in the manufacture of boilers.	51,201.2	1,165,401	22.76			
Flat galvanized iron or steel sheets.	7,528.8	212,669	28.25	5,758.3	162,517	28.22
of any size, thickness, or width; galvanized or coated with any material or not, and steel blanks for the manufacture of milling cutters, when of greater value than 3/4 cents per lb.	23,203.8	1,372,577	59.15	7,022.5	446,538	63.59
Roller iron or steel, polished or not, 14 gauge and thinner, n.o.p.						
Roller iron or steel, band, hoop, scroll or strip, No. 14 gauge and thinner, n.o.p.	2,452.3	408,754	166.68	1,463.1	380,135	228.57
coated with other metal or not, n.o.p.	8,756.4	369,144	42.16	2,130.3	118,107	55.44
Iron tubing, brass covered, not over 3 in. in diameter, and brass trimmings, not polished or lacquered or otherwise manufactured, when imported by manufacturers of iron or brass bedsteads, for use exclusively for the manufacture of such articles in their own factories.	549.0	23,254	42.35	144.8	9,334	64.60
Iron tubing, brass covered, not over 2 in. in diameter, in the rough where imported by manufacturers for use only in their own factories, in the manufacture of towel bars, bath tub rails and clothes carriers.		147,961			137,635	
Iron tubing, lacquered or brass covered, not over 2 in. in diameter, brass covered rods and brass trimmings, when imported by manufacturers of carriage rails, for use exclusively in the manufacture of such articles in their own factories.		512			82	
Iron tubing, lacquered or brass covered, for manufacture of extension rods for windows iron or steel, beams, sheets, plates, angles, knees, masts or parts thereof and cable chains for wooden, iron, steel or composite ships or vessels.		1,813			4,604	
		3,761			5,756	
		405,908	27.27	12,102.7	352,894	29.16

Iron and steel bands, strips or sheets, No. 14 gauge or thinner, coated, polished or not, and rolled iron or steel sections, not being ordinary square, flat or round bars, when imported by manufacturers of machinery, tools, and harness, for use exclusively in the manufacture of such articles in their own factories.....	\$	6,713-0	11,835	47-21	3,841-4	7,354	64-37
Leocomotive and other articles of iron or steel in the rough.....	Tons		316,904			247,286	
Machinery, tools, and harness, which, at the time of their importation, are of a class or kind not manufactured in Canada, imported for use in the construction or equipment of ships or vessels.....	\$		101,590			237,376	
Scrap iron and scrap steel, old, and fit only to be remanufactured, being part of or recovered from any vessel wrecked in waters subject to the jurisdiction of Canada.....	Tons	80-2	554	6-91	429-3	1,977	4-61
Sheep iron or steel, sheared or rolled in grooves, not over 4½ in. wide, for the manufacture of rolled iron tubes not over 1½ in. in diameter.....	"	414-9	10,910	26-30	935-3	24,204	25-88
Machinery:—							
Articles of metals as follows when for use exclusively in mining or metallurgical operations, viz: coal cutting machines, except percussion coal cutters, coal heading machines; coal augers; rotary coal drills; core drills; miners safety lamps and parts thereof; also accessories for cleaning, filling, and testing such lamps; electric or magnetic machines for separating or concentrating iron ores; furnaces for the smelting of copper, zinc, and nickel ores; converting apparatus for metallurgical processes in metals; copper plates, plated or not, machinery for extraction of precious metals by the chlorination or cyanide process; amalgam safes; automatic ore samplers; automatic feeders; retorts, mercury pumps, pyrometers; ballion furnaces; amalgam cleaners; blast furnace blowing engines; and integral parts of all machinery mentioned in this item; blowers of iron or steel for use in the smelting of ores, or in the reduction, separation, or refining of metals, mineral rock or clay; roasters and furnaces of metal designed for testing ores; mineral rock or clay; rammer and trucks and slag pots for use in gold mining.....	\$		629,593			347,756	
Diamond drill and parts of not to include motive power.....	"		48,617			14,678	
Applications of iron or steel, of a class or kind not made in Canada; and elevators and machinery of floating dredges, when for use exclusively in alluvial gold mining.....	"		186,695			137,967	
Well-drilling, and apparatus of a class or kind not made in Canada for drilling for water, natural gas or oil, and for prospecting for minerals, not to include motive power.....	"		222,958			8,017	
Briquette making machines.....	"		3,946			1,176	
Newspaper printing presses, of not less value by retail than \$1,500 each, of a class or kind not made in Canada.....	No.	71	402,310	5,666-34	33	180,349	5,465-12
Machinery or tools not manufactured in Canada up to the required standard necessary for any factory to be established in Canada for the manufacture of rifles for the Government of Canada.....	\$		131,900			572,850	
All materials, or parts in the rough, unfinished, and screws, nuts, bands, and springs and steel for rough, unfinished parts, to be used in rifles to be manufactured at any such factory for the Government of Canada.....	"		211,273			653,950	
Machines, typesetting and typesetting and parts thereof, adapted for use in printing offices.....	"		582,272			285,644	
Machinery of every kind, and structural iron and steel for use in the construction and equipment of factories for the manufacture of sugar from beet root.....	"		8,641			16,533	
Machinery of a class or kind not made in Canada and parts thereof, for the manufacture of twine, cordage, or linen, or for the preparation of paper.....	"		43,020			15,240	
Machines, traction ditching (less than \$3,000 each) adapted for tile drainage on farms, valued at retail at not more than \$3,000 each, and parts of for repairs.....	No.	32	77,993	2,437-28	31	79,953	2,579-13
Mould boards or when cut to shape from rolled plates of steel, but not moulded, punched, polished, or otherwise manufactured.....	Tons		116,3-5	57-22	4,140-5	217,723	52-58
Sewing machine attachments.....	\$	2,033-2	31,413			22,272	
Steel for manufacturing ball bearings.....	"						

Imports of Iron and Steel Goods Free of Duty—Continued.

Material.	CALENDAR YEAR, 1914.			CALENDAR YEAR, 1915.		
	Quantity.	Value.	Value per unit.	Quantity.	Value.	Value per unit.
Steel balls adapted for use on bearings on machinery and vehicles.						
Steel, rolled, for saws and straw cutters, not tempered, or ground, nor further manufactured than cut to shape without indented edges.		\$ 3,269			\$ 3,912	
Steel strips, and flat steel wire when imported into Canada by manufacturers of buckthorn and plain strip fencing for use exclusively in their own factories in the manufacture thereof.	887.3	132,899	\$149.78	788.2	125,182	\$158.82
Steel, rolled, and soft drawn spring of Nos. 10, 12, and 13 gauge, respectively, and bono steel spring of Nos. 11 and 12 gauge, respectively, when imported by manufacturers of wire mattresses, to be used exclusively in their own factories in the manufacture of such articles.						
Steel, crucible sheet, 11 to 16 gauge, 24 in. to 18 in. wide for the manufacture of mower and reaper knives when imported by manufacturers thereof for use exclusively in the manufacture of such articles in their own factories.	569.5	27,672	48.59	807	37,322	46.25
Steel, 160, 20 gauge and thinner, but not thinner than No. 30 gauge, for the manufacture of correct steels, clock springs, and shoe shanks, imported by manufacturers of such articles for exclusive use in the manufacture of such articles in their own factories.	501.0	37,895	75.64	278.4	19,904	71.49
Steel wire, flat, of 16 gauge or thinner, imported by the manufacturers of crinoline, or correct wires and dress stays, for use exclusively in the manufacture of such articles in their own factories.	44.2	4,134	93.53	1.2	221	184.17
Steel, No. 12 gauge and thinner, but not thinner than No. 30 gauge, for the manufacture of buckle clasps, bed fasts, furniture casters, and ice-creepers, imported by the manufacturers of such articles, for use exclusively in the manufacture of such articles in their own factories.	347.5	55,215	158.89	364.2	50,818	139.53
Steel No. 24 and 17 gauge, in the sheets 63 in. long and from 18 in. to 32 in. wide, when imported by the manufacturers of tubular bow sockets for use exclusively in the manufacture of such articles in their own factories.	104.2	5,159	49.51	102.9	5,539	53.83
Steel springs for the manufacture of surgical trusses, when imported by manufacturers of surgical trusses for use exclusively in the manufacture thereof in their own factories.	58.7	3,098	52.78	111.7	4,235	37.91
Rolled iron, and rolled steel nail rods, under half an inch in diameter, for the manufacture of horseshoe nails.	0.3	197	656.67	0.3	264	880.00
Tin plates and sheets.	1,575.3	72,841	46.24	906.3	38,131	42.07
Steel seamless tubing valued at not less than 3½ cents per pound.	50,701.39	3,151,385	62.05	45,164.8	2,883,951	63.85
Steel rolled or drawn square tubing adapted for use in the manufacture of agricultural implements.		7,838	190.72	9.8	1,807	184.59
Steel or iron tubes, rolled, not joined or welded, not more than 1½ in. in diameter, n.o.p.						
Seamless steel, or wrought iron boiler tubes, including flues and corrugated tubes for marine boilers.		37,256			21,654	
Barbed fencing wire of iron or steel.		706,675			310,890	
Wire crucible cast steel, valued at not less than 6 cents per pound.	17,001.3	662,814	38.99	11,499.6	526,347	45.77
Wire, curved or not, galvanized iron or steel, Nos. 9, 12, and 13 gauge.	12	3,142	261.83	8.7	2,116	243.22
Wire rope for use exclusively for rigging of ships and vessels.	35,347.9	1,223,600	34.62	32,631.7	1,233,572	37.80
Wire, steel, valued at not less than 2½ cents per pound when imported by manufacturers of rope for use exclusively in the manufacture of rope.	39.5	4,616	116.86	27.5	5,055	183.82
Total.	3,026.1	237,299	78.42	1,191.1	110,537	92.80
		15,162,193			11,466,812	

A very large proportion of these imports is derived from the United States, and a record has been compiled from the "Commerce and Navigation of the United States," showing the exports of iron and steel goods from that country to Canada.

According to this authority there were exported to Canada from the United States during the twelve months ending June 30, 1915, 596,323 tons of iron and steel goods, valued at \$19,697,148, together with other iron and steel goods of which the weight is not given, valued at \$28,713,872, or a total value of \$48,411,020.

During the twelve months ending June 30, 1914, the corresponding exports to Canada were 1,169,349 tons of iron and steel goods, valued at \$35,921,812, together with other iron and steel goods of which the weight is not given valued at \$40,731,318, or a total value of \$76,653,130.

During the twelve months ending June 30, 1913, exports to Canada were 1,695,916 tons of iron and steel goods, valued at \$51,936,616, together with other iron and steel goods of which the weight is not given, valued at \$54,673,774, or a total value of \$106,610,390.

During the twelve months ending June 30, 1912, exports to Canada were 1,175,464 tons, valued at \$36,637,305, together with other iron and steel goods, valued at \$46,020,989, or a total value of \$82,658,294.

Exports of Iron and Steel to Canada from the United States.

Material.	TWELVE MONTHS ENDING JUNE, 1913.			TWELVE MONTHS ENDING JUNE, 1914.			TWELVE MONTHS ENDING JUNE, 1915.		
	Quantity.	Value.	Average.	Quantity.	Value.	Average.	Quantity.	Value.	Average.
Bar iron.....	11,773.8	\$429,181	\$36.45	6,544.2	\$ 308,248	\$47.10	2,393.0	\$31,766	\$34.17
Barbed wire.....	82,474.3	2,134,198	25.88	63,108.3	1,617,939	25.64	40,961.9	937,836	22.90
Wire rods.....	127,981.6	3,921,471	31.43	92,791.8	3,019,274	32.54	67,146.9	2,111,489	31.45
All other.....	87,068.5	1,218,805	21.20	24,243.5	487,089	20.09	18,426.2	394,946	21.43
Bolts, nuts, and blooms of steel.....	3,220.2	218,805	37.05	2,603.4	181,072	69.55	1,229.2	90,572	73.68
Hoop, band and scroll.....	9,436.3	376,561	39.91	9,137.1	376,999	41.17	7,114.9	299,668	42.12
Horseshoes.....	271.1	24,894	91.83	248.8	22,941	92.21	196.9	20,425	103.73
Nails and spikes—									
Cut.....	8.3	488	58.80	21.3	932	43.76			
Railroad spikes.....	6,218.4	224,193	36.05	3,543.2	121,999	34.43	1,383.9	42,102	30.20
Wire.....	2,262.4	106,603	47.16	1,342.3	62,046	46.22	1,011.8	47,689	49.95
All other, including tacks.....	628.0	48,063	76.53	34.2	34,164	85.80	1,211.5	59,635	91.97
Pig-iron.....	248,846.1	3,124,550	12.56	140,510.7	1,782,862	12.69	43,116.0	602,058	13.94
Pipes and fittings—									
Cast.....	(a) 78,618.7	4,175,057	53.11	(a) 52,674.8	2,732,573	51.88	11,779.1	532,690	45.22
Wrought.....	8,989.5	653,182	72.66	5,722.7	401,980	70.24	14,080.1	862,476	57.57
Radiators and cast-iron heating boilers.....	155,051.7	3,990,657	25.67	129,545.9	3,415,167	26.36	2,615.3	180,640	69.07
Rails for railways.....	84,523.0	1,032,971	12.22	49,570.0	577,917	11.66	8,597.1	230,111	26.77
Scrap and old iron for remanufacture.....							9,962.4	114,542	11.50
Sheets and plates.....	41,505.6	2,428,687	58.51	26,827.5	1,595,003	59.45	24,779.9	1,471,841	59.40
Iron galvanized.....	15,568.1	692,433	44.48	9,763.2	434,525	44.51	6,169.1	280,524	45.47
Iron, all other.....	25,937.5	1,736,254	66.93	17,064.3	1,160,478	67.99	18,610.8	1,191,317	64.52
Steel, plates.....	220,528.7	6,706,433	30.41	141,842.1	4,243,763	29.93	77,580.4	2,253,580	29.05
Steel, sheets.....	3,916.7	3,916,764	34.06	3,916.7	3,916,764	34.06	66,360.2	1,922,088	28.96
Structural iron and steel.....	269,250.2	9,242,288	34.33	171,516.2	5,090,022	31.01	94,535.9	2,535,404	26.82
Tin plates,terne plates, and tappers tin.....	58,289.2	4,065,672	69.75	36,582.3	2,515,867	68.72	38,299.5	2,445,529	63.85
Wire and manufactures of.—									
Wire, barbed.....	16,094.8	656,185	40.77	12,688.9	508,337	40.06	15,027.9	603,083	40.13
Wire, all other.....	49,318.8	1,912,069	38.77	37,436.5	1,476,297	39.43	42,319.3	1,611,454	38.08
Builders' hardware and tools—	1,695,916.0	51,936,616	30.62	1,169,349.3	35,921,812	30.72	596,323.4	19,697,148	33.03
Locks.....									
Hinges, and other builders' hardware.....		479,985			303,601			180,917	
Car wheels.....	14,640	1,712,768			1,365,987			1,065,804	
Castings, not elsewhere specified.....		107,300	7.33	11,696	108,174	9.25	3,976	54,089	13.60
		1,656,680			1,628,211			692,678	

Exports of Iron and Steel to Canada from the United States.—Continued.

Material.	TWELVE MONTHS ENDING JUNE, 1913.			TWELVE MONTHS ENDING JUNE, 1914.			TWELVE MONTHS ENDING JUNE, 1915.		
	Quantity.	Value.	Average.	Quantity.	Value.	Average.	Quantity.	Value.	Average.
Woodworking machinery, sawmill		\$ 439,173			\$ 221,283			\$ 171,678	
Woodworking machinery, all other		477,345			511,600			177,877	
All other parts of		10,872,249			10,095,534			7,297,541	
Railway track material (except rails and spikes) such as switches, frogs, fish-plates, splice-bars, etc.		732,617			793,134			260,981	
Saws.	3,403	208,277	61.20		135,612	44.17	1,571	57,469	36.58
Scales, and balances.		158,349			134,191			80,765	
Stoves, ranges and parts of.		1,314,725			975,460			450,537	
Tools not elsewhere specified—									
Axes.	83,122	44,526	54	70,548	38,493	55	20,183	11,288	0.56
Hammers and hatchets.		74,947			38,979			12,843	
Saws.		346,887			234,721			142,507	
Shovels and spades.		23,099			15,087			19,067	
All other.		1,866,713			1,371,832			925,052	
Wire manufactures—woven wire fencing		114,395			93,370			112,226	
Wire manufactures—all others.		876,288			365,327			333,556	
All other manufactures of steel.		7,877,122			7,375,163			5,067,959	
Total value.		54,673,774			40,780,471			28,713,872	
		106,610,390			76,702,283			48,411,020	

* Compiled from Commerce and Navigation of the United States, Washington, D.C.

(a) Not separately stated.

(b) Included in all other machinery and parts of.